The Croonian Lectures

ON

THE CHEMICAL PRODUCTS OF PATHOGENIC BACTERIA CONSIDERED WITH SPECIAL REFERENCE TO ENTERIC FEVER.

Delivered before the Royal College of Physicians of London

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LECTURE I.[1]

Delivered on June 14th, 1898.

MR. PRESIDENT AND GENTLEMEN,—I propose in the following lectures to discuss generally the nature and action of the poisons and chemical products formed by pathogenic bacteria and to illustrate the subject by an investigation which has occupied me recently of the pathogenic action and the chemical pathology of the typhoid bacillus and of two other bacilli closely related to it. Most of the poisons which are to be considered are substances which cannot be defined chemically and this at the outset is a very great difficulty in an attempt to classify such poisons accurately.

The transformations which bacteria, both non-pathogenic and pathogenic, produce in substances are of great variety. Some non-pathogenic bacteria are concerned, for example, with nitrification, a process in which ammonia compounds are transformed into nitrates and nitrites. These bacteria are more or less specific, and although some pathogenic organisms have a somewhat similar action in this respect it is very slight. Another example of a similar character is the splitting up of urea into ammonia and carbonic acid by the micrococcus ureæ. These actions, however, are not of the nature of the chemical changes produced by pathogenic bacteria. The changes which bacteria produce in carbohydrate substances—e.g., starches and sugars—are the transformation of the starch into one or other kind of sugar and the decomposition of the sugar into alcohol and acid bodies such as lactic, acetic, and butyric acids. Such changes are usually spoken of as those of fermentation and are allied to changes which occur in the digestive processes of the higher animals, by means of the organic, as distinguished from the organised, ferments.

Some bacteria are capable of still further acting on the acids produced in the first-named fermentations; thus, the bacillus butyricus can transform lactic acid into butyric acid with the formation of carbonic acid and hydrogen. These are, again, not the changes which are of the greatest importance in considering pathogenic bacteria. Although some pathogenic bacteria act on starches and sugars with the formation of acid bodies and gases, yet the products so formed play but a small part in the production of disease. Fats which are largely present in the body and are taken in with food are also broken up by bacteria of one kind or another. The products, however, from a pathological point of view, are of minor importance. From the albuminous substances, however, the third great class of organic substances which serve as food and act as important chemical constituents of the body, the pathogenic bacteria produce substances possessing important physiological actions. The albuminous molecule, containing carbon, hydrogen, nitrogen, sulphur and frequently phosphorus, is unknown as regards its chemical constitution. It is no doubt highly complex and is capable of being broken up both by organic ferments and by bacteria into numerous bodies of the most complex nature. Although the actual constitution of the albuminous molecule is at present undetermined it is capable of being transformed only in certain directions. Thus, by the action of mineral acids and alkalis with the aid of heat, white of egg or the serum proteids are transformed into acid and alkali albumin which differ from the original proteid mainly in their solubilities in acid or alkaline solution. The acid form is precipitated by an alkali and *vice versâ*, the precipitate being capable of coagulation. Like the original proteid, however, these bodies are capable of digestion. The digestive transformation which takes place in the stomach and small intestines consists in the change of these slightly soluble and coagulable proteids into more soluble and diffusible ones, the formation of the so-called albumoses and peptone. The important members of this class are soluble in water, are not precipitated by heat and are capable of some amount of diffusion. They all give a bright pink colour with a trace of copper sulphate solution and an excess of potash. True peptone differs from some of the albumoses in the fact that it is not precipitated by nitric acid. One of the characteristic albumose reactions, for example of proto-albumose, is that the precipitate by nitric acid is soluble on heating the solution and comes down again on cooling. Peptic digestion probably does not go farther than the formation of peptone and results chiefly in the transformation of the proteids into albumoses. Pancreatic digestion, however, can split up the proteid molecule or part of it into crystalline bodies containing nitrogen, such, for example, as leucin and tyrosin. This digestive action on proteids produced by organic ferments is also a feature of the action of some of the organised or bacterial ferments, except that the effect is more pronounced and results in the breaking up of the proteid molecule into many different non-proteid substances, which may be considered the final products of the digestive action. This digestive action of pathogenic bacteria is, however, only a part of the question we shall have to consider. The chief cell of the peptic gland secretes pepsin, which is discharged in the gastric juice into the stomach cavity; the pancreatic cell secretes trypsin and other ferments, which are discharged into the small intestine with the pancreatic juice; and, therefore, in any digestive mixture obtained from the stomach or intestine there is present, besides the products of digestion, the ferment or the active agent in the transformation. In the case of bacteria growing in an artificial medium outside the body or developing in the body there is, in addition to what digestive products may be formed, a living bacterial cell and any secretion which it may produce; and it will be seen that the body of the bacterium as well as its secretion, whether this be of the nature of a ferment or not, are both of the highest importance in the consideration of the diseased conditions and processes. In bringing these aspects of bacterial action to your notice it will be seen to what extent the products of their digestion of albuminous substances or the mere secretion of poisonous substances act in disease.

The study of putrefaction, which is produced by many different micro-organisms, has shown that, besides the production of albumoses as the early products of digestion, numerous chemical substances or final products are formed, some of which are not toxic, although many are highly poisonous. It is not necessary to dwell on this part of the subject except to say that the effects of these toxic bodies of putrefaction are (1) that of intense local irritation, whether they are injected under the skin or introduced into the digestive tract; and (2) an action on the central nervous system whereby, besides the production of muscular twitchings and clonic and tonic spasms, there is with many of them a tendency to the production of stupor and coma, ending in death. These chemical products of putrefaction, with perhaps one exception—that of mydaleine—do not cause a rise of body temperature, so that the fever which is observed in cases of poisoning by putrefactive products, such as those occurring in some cases of food poisoning, are due to other products of the bacteria. At one time similar chemical products, or animal alkaloids as they are called, were supposed to play a large part in the processes of specific infective diseases. Thus Brieger isolated two bodies, tetanin and tetano-toxin, which were supposed to be the active agents in the production of the convulsive spasms of tetanus. He also isolated typho-toxin, a chemical body which was supposed to be an active poisonous agent in typhoid fever. The existence of these bodies has, however, not been confirmed by subsequent research. It does not follow, of course, that in all diseases such final products may not play a part in the production of the symptoms. As I have shown, in anthrax such a product is formed and is one of the active poisons in the disease. Of later years, especially as the result of the study of the chemical pathology of diphtheria and of tetanus, the most active poison which is

[1] Lecture II. was delivered on June 16th, and Lectures III. and IV. will be delivered on June 21st and 23rd respectively.

produced by the micro-organism is not of the nature of an animal alkaloid but a substance which cannot be defined chemically but only by the investigation of its physiological action.

Separation of bacterial poisons.—The three kinds of poisons which have been indicated must be borne in mind—(1) the poisons secreted by the bacterium itself; (2) the products of the digestive action of the bacterium—i.e., the albumoses; and (3) the final non-proteid products, which may be provisionally called animal alkaloids. The first two poisons are precipitated from solution by means of alcohol. Generally speaking, the last class of poisons is soluble in alcohol. In the separation of the first two classes of poisons by means of alcohol great care has to be taken that they are not exposed for too long a time to the action of the reagent, so that their toxic properties may not be diminished. The prolonged action of alcohol, for example, on pepsin will diminish its activity, and so it is found that its prolonged action on the poisons of diphtheria and tetanus greatly diminishes their activity. Any method, therefore, in which alcohol is employed must be a rapid one, the poison not being exposed to its action for longer than a few hours.

Another method which is employed in the separation of these poisons is precipitation by means of saturation of the liquid with neutral ammonium sulphate. By this means all the proteids are thrown down with the poisons and may be collected, redissolved, and dialysed. To my mind, however, this method is open to grave objections. Ammonium sulphate is itself poisonous and it is extremely difficult to remove the last traces of the salt except after prolonged dialysis in the presence of antiseptics, which may be hurtful to the poisons. During the process of dialysis the solution becomes greatly diluted owing to the absorption of water from outside the dialyser, so that there is at the end a very dilute solution of the poison which has to be concentrated before it can be used. There is no advantage in this method because, although it gives rapid precipitation of the poison, yet the final product is not any purer than when alcohol is used as a precipitant. Other methods have been used by Brieger and others whereby the poisons have been precipitated by the salts of heavy metals which are got rid of afterwards by various means. Even in this case we are not much nearer the chemical identification of the poisonous substances.

Preparations of secretory products of the bacteria.—The two best known examples of toxic secretory products of bacteria occur in the bacilli of diphtheria and of tetanus. They are produced by growing the bacillus in a medium made of sterilised extract of meat, to which 1 or 2 per cent. of commercial peptone and a small proportion of common salt are added. This is the ordinary broth peptone. It is a medium in which the proteids exist in a digested form, so that any digestion by the bacterium of the proteids does not take place as it might do if serum albumin or white of egg were present. After growing in the medium for a certain time—three weeks, a month, or longer—and after filtering off the bacilli through a porcelain filter a clear sterile liquid is obtained which is extremely poisonous. This liquid when injected into an animal gives rise—in the case of diphtheria—to the characteristic symptoms of the disease—namely, a palsy, which is mainly dependent on the degeneration of the peripheral nerves, and in the case of tetanus to the characteristic symptoms of the disease. In this poisonous liquid no manipulation has as yet demonstrated the chemical identity of the poison. Such a liquid gives a copious precipitate with alcohol or on saturation with ammonium sulphate and this precipitate is itself highly poisonous, containing most of the poison present in the liquid, and consists almost entirely of the peptone which has been added to the liquid in the preparation of the culture medium with some of the salts of the broth.

An attempt was made by Roux and Yersin to isolate this poison by adding phosphoric acid and then lime to the liquid, the precipitate of calcium phosphate formed carrying down the poison. It was found that the small amount of this calcium phosphate mixture which killed an animal did not show any appreciable difference in weight from the amount of calcium phosphate present; that is, the amount of poison present was practically imponderable. This may also be appreciated by the statement that even as little as one-twenty-fifth of a cubic centimetre of the broth filtrate may kill a guinea-pig weighing 300 grammes in 48 hours. Kitasato also found in his experiments on the bacillus of tetanus that the broth filtrate was poisonous in what were practically infinitesimal doses. It is evident that in these cases we are dealing with a poison which is at present quite outside the domain of chemistry; it cannot be expressed chemically, it can only be expressed from its pathological effects.

Separation of the digestive products.—To obtain these it is necessary to grow the bacillus in a liquid containing either alkali-albumin, serum, or any of the liquids of the body containing proteids in solution. Extract of meat and salt (i.e., broth without peptone) is with advantage added, as it thus makes a better culture medium for the bacterium. After the bacillus has grown in this liquid for from three to five weeks and it is filtered off through porcelain the clear filtrate after concentration at 40° C. is precipitated by an excess of alcohol, and the precipitate collected and redissolved in water, reprecipitated by alcohol, and after washing in alcohol and ether is dried over sulphuric acid. In this way a lightish brown powder is obtained, readily and completely soluble in water and giving the reactions of albumoses—namely, the biuret reaction and the characteristic precipitate with nitric acid.

Some bacteria, for example, the anthrax bacillus, have practically no toxic secretion and the albumoses are readily separated in as pure a form as can be obtained; but with others, for example, the diphtheria bacillus, where there is not only a secretory product, but also digested products: the powder which is obtained by the method thus stated contains not only the secretion but also the albumoses. There are no chemical means of separating these secretory products from the albumoses, but some degree of separation may be obtained by keeping the solution at 60° C. for a longer or shorter period, whereby the secretory product is rendered inert. This is, of course, only a rough method, inasmuch as heat also damages, in some instances, the action of the albumoses.

Separation of the final products.—The third point is the separation of the final products. These final products are contained in the alcoholic filtrate after precipitation of the proteids in solution. This alcoholic filtrate is evaporated to dryness at a temperature of 40° C. and extracted with absolute alcohol. The extract is filtered, evaporated again to dryness, and redissolved in alcohol. After filtration and if necessary concentration it is thrown into an excess of ether, which causes a precipitate; and the alcoholic extract may thus be separated into two parts, one of which consists of substances which are soluble in alcohol and insoluble in ether and are precipitated by ether and other substances—chiefly fats—which are soluble in ether and alcohol, but insoluble in water. This manipulation and separation of the substances is of course at present a very imperfect one inasmuch as the substances so separated have not been obtained in a sufficiently large quantity, nor are their chemical characteristics sufficiently worked out to enable a definite idea of these characteristics to be obtained, but for the purposes of physiological experiment and of determination as to the general nature of the poisons produced by pathogenic bacteria I have found this method of great value.

In the investigation of toxic products formed in infective disease not only must they be studied by means of the artificial culture of the bacillus in suitable media, but a chemical examination of the body itself, especially as regards the blood, the spleen, and the liver, is necessary in order to determine whether the same products are found in the body as in the artificial culture. This study is of great value when the poisons have a specific action—for example, in the case of diphtheria and of tetanus; but in the diseases in which there is no specific symptom due to a chemical poison it may be impossible to prove the identity of the poisons produced by the bacterium and those found in the bodies of patients dead from the disease.

Intra-cellular bacterial poisons.—The three classes of poisons just considered or described are extra-cellular bacterial poisons, but besides these, which are present in the culture fluid in which the bacteria are grown, poisons may be present in the bodies of the bacillus—intra-cellular poisons—and these have to be studied by means of other methods. One method is to kill the bacillus which is grown in broth by chloroform. If a few drops of chloroform are added to the liquid and shaken up and allowed to act for twenty-four hours or longer the bacilli are killed, so that on testing the liquid is found to be sterile. The bacilli are still suspended in the liquid, and after evaporation of the chloroform *in vacuo* the liquid may be used for experiment. Besides the bodies of the

bacilli it of course contains any secretory poisonous product it may form. The results obtained by the injection of this liquid may be compared with those observed with a broth culture also chloroformed, and from which the bodies of the bacilli are removed by centrifugalisation. The comparison of the two results enables one to observe the difference in the action between the poison contained in the body of the bacillus and the secretory product; between the intra-cellular poison and the extra-cellular.

Another method is, after growing the bacillus on a large surface of agar, to scrape the culture from the surface and suspend it in sterile salt solution. Some amount of extra-cellular poison may be present in this suspension as well as in the first case. In filtering a culture fluid through a Chamberland filter some of the toxic products may be held back by the filter itself, and this is the more likely to be the case if the solution contains a large amount of undigested proteid—for example, serum. The method of killing the bacillus in the fluid by means of chloroform and centrifugalisation to get rid of the bodies of the bacilli is therefore a very important one in the investigation of the toxic products of the bacterium, especially as in this way the intra-cellular poisons of the bacillus can be investigated.

Toxic action and reaction.—The physiological action of these products may be investigated by studying the effects produced by their injection subcutaneously, into the peritoneal cavity or into the venous system. As the result of the intravenous injection of poisons a more rapid effect is produced than by other methods and observations may be made in rabbits as to the effect of the poison on the temperature, on the body weight and on the intestine (as regards the production of diarrhœa), as well as its effect on the production of microscopical lesions in the nervous system, the heart, liver, spleen, and kidneys. From the experimental point of view infective diseases may be divided into two great classes. In one of these the symptoms are only those of what we must call a toxæmia or blood-poisoning—that is, there is fever in a greater or less degree, with great bodily depression and loss of weight, with some alteration in the secretion of the glands, more evidently those of the kidney and the skin. At some period or other of this process the fever may be absent and yet the process of poisoning may be progressive. In the second class of cases besides the symptoms of toxæmia there are present during the acute disease, or following as sequelæ, specific lesions, mainly of the nervous system. Examples of toxæmia without specific lesions occur in anthrax or malignant pustule and in typhoid fever. Examples of the second class are diphtheria and tetanus, in both of which, besides the toxæmia, there are specific symptoms referable to the nervous system.

The animals which have been used in the investigation were rodents (rabbits and guinea-pigs), between which and the higher animals there is a great gap, chiefly on the side of the nervous system. This point must be borne in mind in any deductions made upon the action of poisons upon the nervous system in rabbits. The method of procedure in the experiments was as follows. The weight and rectal temperature of a healthy rabbit are taken for two days at least previously to the experiment. In this way an indication is obtained by the increase of weight in the animal and by the regularity of the temperature as to whether it is healthy or not. The injection is then made, usually into the marginal vein of the ear, and the effect of the poison on the temperature, body weight, &c., observed during the life of the animal. After death or at killing cultivations are made from the heart's blood, the peritoneal cavity, and the spleen or liver, to demonstrate the absence of bacterial action, and the nerves (the phrenic and branches of the anterior crural) are stained with osmic acid for the investigation of degeneration, and a portion of the left ventricle of the heart is also stained in the same liquid for examination of any change in the fibres. Bacterial poisons appear to have a specific action on the heart of the rabbit in the production of degeneration of the muscle fibre, a degeneration which is the expression of the cardiac failure so frequently observed in infective disease in the human animal.

One important point as regards the action of these bacterial poisons must be noted—namely, that they have in many cases a very slow action, so that following on a single dose there may be some slight change observed in the temperature or in the body weight which passes off. Subsequently, the animal either progressively goes downhill and succumbs after a week or fourteen days or longer or there may be no apparent downward progress and death occurs suddenly. This slow action of the bacterial products is so common as to be noted particularly and in some cases it precludes any exact investigation of their effects on the circulation of the blood within the time limits of an experiment.

Toxic reaction.—Besides the poisonous effect of the bacterial products on the body whereby an injury is effected on the tissues, producing either alteration in function with or without obvious degeneration of the tissue itself, bacterial products may produce what may be called a toxic reaction. This occurs most readily as the result of the injection into an animal refractory to the disease of small but gradually increasing doses of poison. There is no accumulation of the poison in the body, but there is a gradual increase in the blood and tissues of a substance or substances which are inimical to the poison or the bacillus—that is, under certain conditions they may prevent, when injected at the same time, the fatal effects of the poison on the bacillus. These substances probably fall into two groups: (1) the antitoxic, which counteract the effects of the poison itself; and (2) the anti-microbic, which counteract the effects of the bacillus itself. In one and the same animal the blood may contain a substance or substances which are both antitoxic and anti-microbic—such, for example, as occurs in the process of the formation of the diphtheria and tetanus antitoxic serum. As an introduction to the investigation which I have more recently done it will be well to discuss as examples the chemical and pathological processes which occur in anthrax, diphtheria, and tetanus.

Anthrax.—I have previously shown, and subsequent experiment has only confirmed the observation, that the bacillus of anthrax produces in the body of an animal the subject of anthrax and in an artificial culture medium containing digestible proteids a large quantity of albumoses and of a body which gives some of the reactions of an alkaloid. Both these classes of bodies are poisons, the albumoses producing fever and causing death in coma when given in large doses; the alkaloidal body, which is much more poisonous, producing no rise of body temperature and causing stupor ending in coma and death in mice, guinea-pigs, and rabbits. According to the dose given death may not be produced, but the stupor and coma may last for a certain time and then be recovered from. The bacillus of anthrax is a typical infective micro-organism and it is the chief example of the class of micro-organisms whose toxic products are the results of the transformation of the proteid solutions in which it grows. Practically it produces no toxic secretion. If any is produced at all it must be in very small amount, inasmuch as when grown in peptone broth it imparts little or no toxicity to the liquid as tested by injection after removal of the bacilli through the filter.

Tetanus.—This is quite different from the results obtained in the bacillus of tetanus. If this is grown in a solution of peptone broth under suitable conditions it is found to produce a highly toxic substance, which, as has been previously stated, is practically unweighable. This substance, which must be considered a secretion of the bacillus, possesses a characteristic physiological action in that it produces the characteristic convulsions of the disease tetanus. It is the chief toxic agent produced by the bacillus. Kitasato once found it in the heart's blood of a patient dying from tetanus. In a number of cases of tetanus which I examined chemically I did not find this poison, although perhaps this result is not of much value, as the method I employed would possibly destroy the somewhat sensitive toxin. I found in the spleen and blood of patients dying from tetanus albumoses in fair quantity which did not possess any other action than that of producing fever; they produced no convulsions and did not cause death. I have previously stated that in one experiment I found that the ether extract of the spleen in tetanus produced convulsions when injected intravenously in rabbits. This undoubtedly occurred, but I am not at all sure that it is of very great significance; at any rate, I could not confirm the observation and I do not wish to lay any stress on it. It must be considered at present that the chief, if not the only, active poison in tetanus is the secretion of the bacillus, which when injected into the body after a certain period produces convulsions. With regard to the albumoses which are present in the body, in the spleen and blood of patients dying from tetanus, they may be in some cases the result of a mixed infection by the bacillus of tetanus and other

bacteria, but they may be the result of the direct action of the tetanus bacillus or of its toxin, although the proof of this is at present wanting. I did not find that the tetanus poison had any digestive action.

Diphtheria.—The chemical processes in diphtheria closely resemble those in tetanus. There is a secretory product which is produced when the bacillus is grown in peptone broth which is present in the membrane of diphtheria and probably in the tissues as well. This secretory product possesses a characteristic action on the nervous system, causing in rabbits paralysis dependent on nerve degeneration. When the bacillus is grown in a solution containing digestible proteids it digests these with the formation of albumoses and certain bye-products. These albumoses separated in the ordinary way have a toxic action, similar to, although not so powerful as, that shown by the secretory product. They are also found in the spleen and blood of persons dying from diphtheria and possess a similar action. Whether the whole of the toxic action of the products is to be ascribed to the albumoses themselves is perhaps a matter of debate, inasmuch as the only method by which the physiological action of the secretory product can be separated from that of the albumoses is that of heat, which also affects the action of the albumoses.

What I have called the secretory products of tetanus and diphtheria are remarkably sensitive to heat; that of tetanus, for example, is completely destroyed by raising to a temperature of 80° C.; that of diphtheria is destroyed at a temperature of 60° C.; and heating to lower temperatures weakens the action of the poison or alters its effects.

It is evident that the action of the powerful secretory products of pathogenic bacteria is unlike that of crystallisable poisons. Firstly, they produce a large effect in very small doses; secondly, this effect does not come on immediately after injection, but is preceded by a period during which no apparent change is occurring in the body; thirdly, the poisons are frequently selective in their action, affecting mainly the nervous system, on which they produce a profound effect; they may also disorganise the general nutrition of the body; and fourthly, they are very sensitive to heat and external conditions. Their injection into the body—their effect being preceded by a period of incubation—reproduces the action of the bacillus itself, so that one has to do with a poison which, although not living, possesses a progressive change in the tissues of the body like the bacillus.

The Ingleby Lectures
ON
EXTRA-UTERINE PREGNANCY.

Delivered at Mason College, Birmingham, on May 11th, 18th, and 25th, 1898,

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LECTURE III.[1]

Delivered on May 25th.

ON THE DIAGNOSIS AND TREATMENT OF EXTRA-UTERINE PREGNANCY.

Diagnosis.

MR. DEAN AND GENTLEMEN,—When extra-uterine pregnancy is present and has by its symptoms driven the patient to seek for advice, at every stage—up to "term" with death of the fœtus—there are certain indications to be derived from history, symptoms, and physical signs which are sufficient in most cases to establish a correct diagnosis. In my own series of 37 cases a correct diagnosis was formed in 27 cases. In one case (the first case) no diagnosis was made. In 3 cases the diagnosis was made of tubal disease only. In 2 cases the diagnosis was made of myoma. In 4 cases the diagnosis was made of ovarian cystoma. Three of these were instances of ovarian cyst complicated by the co-existence of tubal pregnancy, and in one of these an alternative diagnosis was recorded of ovarian cyst or tubal pregnancy. In only 3 of the cases was the diagnosis absolutely mistaken and in two of these, and even in some of the cases of imperfect diagnosis, I think it may be said with perfect truth that the fault was my own and that imperfect knowledge, carelessness, or some false suggestion at the outset was responsible for the blunder. The omissions or mistakes which I have just enumerated are necessarily confined to cases on which I have operated. I believe I know of 2 other cases in which I did not fully recognise the condition and therefore failed to do my duty. The one was a case of diffuse hæmorrhage—probably from early rupture of the tube. The patient was quite pulseless when I was called to her and although there was some history of delayed menstruation I could not find on examination any pelvic tumour or physical sign pointing to a misplaced pregnancy. I did not know at that date that in some cases of very early rupture this may be entirely wanting. I was uncertain and the possible moment for action was lost. The other case was one of early tubo-ligamentary pregnancy. The patient was herself suspicious that something was not right about her pregnancy and asked my opinion. After careful bimanual examination I came to the conclusion that the pregnancy was intra-uterine and normal and reassured the patient. Some nine or ten months after this I found that the time for confinement had been passed without result and that one of my colleagues had operated on the patient, removing a dead fœtus from an intra-peritoneal sac which was exactly similar to those I have described as posterior-ligamentary or retro-peritoneal. It is worthy of notice that the only case of this kind which figures in my own series (No. 4) had been seen at an early stage of the pregnancy by the same colleague and had been considered by him to be intra-uterine and normal. There is probably some good reason for the occurrence of the same mistake in the practice of two surgeons, both of whom have had special experience of extra-uterine gestation. Again, my operation list does not of course contain any case in which I have diagnosed an extra-uterine pregnancy and found a different condition. Four of such mistakes I can remember. One was a case of retroflexion of the gravid uterus with intra-peritoneal adhesions. This occurred very early in my practice. Two were cases of double pyosalpinx with temporary cessation of the menses; the other case was one of malignant tumour of both ovaries. In this case also there was consequent amenorrhœa. Other cases in which an alternative diagnosis was made or in which the possibility of extra-uterine pregnancy was entertained will be referred to under "differential diagnosis." Finally, I have to add to my list of successful diagnoses some six additional cases of extra-uterine pregnancy in which the operation was performed by another surgeon. In one of these cases a tubal pregnancy of one side was complicated by a pyosalpinx of the opposite side, the only instance in my own practice in which I have found tubal pregnancy and suppurative salpingitis directly associated. As subsidiary material helping to form my experience I have also to add nearly 50 cases of extra-uterine pregnancy which I have watched during the last fourteen years in the practice of my colleagues.

In considering both the diagnosis and the treatment of extra-uterine pregnancy I shall follow as nearly as possible the divisions already framed when dealing with its pathological history. Our first consideration, accordingly, will be the diagnosis of a case of earliest rupture of the tube with diffuse hæmorrhage. The patient is probably a married woman and one who of course must necessarily be within the limits of the child-bearing period. She has probably been in perfect health until an hour or so ago. She was then suddenly seized with a pain in the abdomen, "as if something had given way inside her." She became faint and collapsed, was sick and lay down upon the couch or was assisted to her bed. She was given a little stimulant and for a few minutes felt perhaps slightly better. On reflection the attack did not altogether surprise her. Her proper menstrual period was due last week, but instead of coming on as usual was delayed for some days (an uncommon occurrence for her), and during the last three or four days, although there has been some discharge of blood from the vagina, which for an hour this morning was quite profuse, the period has not come on "properly" or in a customary manner. Such, or something like it, is the history. On glancing at the patient the observant practitioner will probably notice at once the paleness of her

[1] Lectures I. and II. were published in THE LANCET of May 28th and June 4th, 1898, respectively.

countenance and lips and her seriously "passive" expression. This can easily arise from simple faintness with but little or no loss of blood or from active hæmorrhage. The pulse will decide it. If from simple faintness, although it may be temporarily lost or difficult to find, the pulse when felt again will be found to be slow and moderately full, while if hæmorrhage be still in progress the pulse increases in frequency as the hæmorrhage proceeds and after a time becomes perceptibly weaker. Perhaps the normal pulse-rate is known, and if so it will be found that it is twenty or thirty or forty beats in the minute faster than is usual and that the ratio is still increasing. This is obviously not due to nervousness or excitement, for the patient is curiously self-contained and quiet. Every now and then the pulse becomes fluttering and difficult to count and at these times there is usually some nausea and vomiting. Between these periods of extra-faintness it may temporarily improve in quality, but its rapidity does not diminish so long as the bleeding is unchecked. The temperature is sub-normal. If the hæmorrhage continue unabated a colder greyness slowly creeps over the countenance, the voice becomes feeble, the sight is dimmed, the fingers become white and rather cold, and the patient now speaks but little or only in answer to direct questions. Still, however, the mind remains clear and the patient is often acutely observant of all that passes around her. I have known a patient in this condition, rescued from imminent death by operation, speak afterwards of several things connected with her operation of which at the time it was thought she was practically unconscious. It is needless to try to trace the symptoms any farther—the patient is dying—and if anything is to be done to save her life it must be done at once.

In some of the worst cases (the symptoms of which I have been attempting to describe) there are no pelvic or abdominal signs of any definite importance or certainty. The hæmorrhage may come from a very little swelling near the cornu of the uterus and if the latter be inclined to retrovert the tubal swelling may be inaccessible. The blood is fluid; it is continually pouring or dribbling into the abdomen and the patient never has vitality enough for any kind of inflammatory reaction. In addition the patient may be stout, the abdominal parietes thick, and a satisfactory bimanual examination be altogether impossible. Then without any sign directly pointing to the tube the symptoms of internal bleeding must be our ground for action. Fortunately, however, in the majority of cases there is additional, and sometimes abundant, evidence to be obtained by careful examination. Sometimes a tumour is to be distinctly felt at one side of the uterus—sometimes a "decidua" has been passed *per vaginam;* usually the pouch of Douglas may be felt distended by blood-clot, the sensation of an ill-defined but full and boggy swelling being communicated to the finger of the examiner. In one case I detected absolute fluctuation of the blood through the abdominal walls before opening the abdomen, and other indications of blood in the abdomen may be elicited by percussion—dulness in the flanks very slowly changing with changes of position (Mayo Robson)—while in all cases which survive the first few hours, and in which the bleeding is temporarily checked, there is difficulty in the passage of flatus and motion—the patient suffers from considerable abdominal pain and, in short, the signs are present of peritonitis as well as those of recent hæmorrhage. In these cases it is but very rarely (if ever) that any evidence pointing to pregnancy is to be obtained from the condition of the breasts or areolæ or from the sensations of the patient. These are always feeble and more often wanting in the early stages of extra-uterine pregnancy, and any search for them with reliance on their importance will probably increase doubt at a time when certainty and action are of the utmost value.

Now as to differential diagnosis: in a case of early rupture with diffuse hæmorrhage the symptoms are so notably sudden and instant in their origin that there is but small danger of any other affection being suspected save those of similar acuteness. To one unversed in gynæcological disease the idea of poisoning is apt to come uppermost. Gastric or intestinal perforation from ulcer of the stomach or acute appendicitis may also be suspected. In all of these there may be the same sudden onset, but except as a curious and improbable coincidence there would not be the contemporaneous presence of an irregular blood-discharge from the vagina, and the history, however poor, of some delay in the appearance of the period. In all of these, too, the immediate pain and distress are much more violent than in hæmorrhage, while in gastric perforation (which usually occurs in young unmarried women) and in acute appendicitis there are antecedent symptoms or attacks which point to the stomach or the appendix as the source of trouble. As a matter of fact the question of these diseases has occurred to those concerned rather as post-mortem doubts and fancies after the patient has died than as serious diagnostic difficulties during life. The chief danger of the practitioner in my own experience has been to under-estimate the importance of the condition before him. The medical attendant has been unaffectedly surprised at the consultant's diagnosis and in one case he was evidently incredulous until the blood was pouring out of the opened abdomen. It has been the difficulty of making any diagnosis at all rather than the making of a wrong one which has usually been the stumbling-block and in two of my cases a physician was the first consultant who was sent for. In both of these cases I am happy to say the condition was recognised by the physician, and the surgical interference recorded was the result of his diagnosis.

Our next consideration is the diagnosis of an unruptured tubal pregnancy—of tubal mole and of peri-tubal hæmatocele. In the preceding section, when dealing with early rupture and diffuse hæmorrhage, we found that of the three chief factors which go to form the diagnosis, the symptoms—symptoms of internal abdominal bleeding—were on the whole the most reliable, that the history was of next importance, and that the physical signs of any tumour (although of the utmost value when present) were uncertain and might be practically wanting. As we proceed with our subject and discuss later and still later developments of extra-uterine pregnancy we shall find both history and physical signs increasing in value, and it is to these, therefore, that we shall mainly direct our attention: but at all the stages referred to (except the very latest) diffuse internal hæmorrhage may intervene and add its special signs and symptoms to those already present.

The previous history of the patient—the history before the pregnancy begins—is of some importance. There is a certain amount of well-being of the genital organs which is probably necessary for conception to take place, and in any case of pregnancy, whether uterine or extra-uterine, the patient has usually been moderately well and free from any marked pelvic trouble immediately before the act of impregnation. This period of ante-pregnant or ante-amenorrhœal well-being, which is of little or no importance in normal pregnancy, is worthy of special attention when there is a possibility of misplaced pregnancy, because the tumours with which this is liable to be confounded have usually some history of illness rather than of health immediately preceding their formation. Again, in rather more than half the number of cases of extra-uterine pregnancy several years have elapsed since the last normal pregnancy took place, and although the absence of this interval is of no diagnostic significance (as the accompanying tables will show), its presence in a suspicious case may be held as slightly increasing that suspicion and as being in accordance with the history of other recorded cases.

From the consideration of these two points we pass on to the history of the pregnancy itself. It is obvious that as the duration of the pregnancy increases so must its history be traceable for longer and still longer measures of time, and the chief sign which marks this is the absence of the normal menstrual period—not necessarily the absence of all sanguinolent discharge, but the absence of the normal period in its usual course. Some critical discrimination is often needed in order to arrive at a just conclusion on this point. For instance, in tubal mole (as I pointed out in 1894), there is often no definite history of amenorrhœa—that is, the patient has never gone "over her time" without vaginal loss, and if carelessly questioned such a patient will probably answer that she has been "regular" throughout, but that the present period is unusually protracted. On closer inquiry (of the same patient) we may, however, probably elicit the fact that the hæmorrhage which has been taking place during the last three or four weeks is very different in character from that of a normal menstrual period, and the patient has no difficulty in fixing a date some seven or eight weeks previously when she was last "properly poorly." Dr. Cullingworth has recently drawn attention to the characters of the hæmorrhage observed in this condition. He writes: "The blood is

almost invariably dark in colour, moderate in amount, thickish in its consistence, and steady in its rate of flow. Gushes of bright red blood occur occasionally but are quite exceptional." If we add to this that the hæmorrhage is very persistent and that it may carry with it some shreds or portions of decidual membrane, all its special features have been noticed. Apart from the presence of decidua the most practical point, in my opinion, is the contrast often afforded by this bleeding to the normal bleeding of the menstrual period in the same individual. The type of menstruation often varies but little for years together and it is very rare that an intelligent patient is unable to detect the difference. Amenorrhœa, then, together with or followed by persistent, dark-coloured uterine bleeding of moderate amount is almost always met with. The hæmorrhage is usually due to some separation of decidual membrane from the interior of the uterus and is, moreover, a sign that the vitality of the pregnancy is endangered or destroyed. So long as the pregnancy—although out of place—is growing and uninjured there is, as a rule, no uterine bleeding. If the decidua be shed it does not follow that the bleeding ceases. Hæmorrhage continues from the interior of the uterus while the abortive pregnancy remains as a source of irritation within the tube, and in some cases at least I have very little doubt that the hæmorrhage comes directly from the tube—the tube containing the mole of pregnancy—bleeding alike into the uterus by its open uterine end and into the pelvis by its open fimbriated end.

We now pass to the physical signs elicited by examination of the patient. When dealing with the pathological history of tubal pregnancy I noticed that one of the earliest and most marked phenomena attending its presence was the increased vascularity of the parts affected. There is a sign, a very constant and valuable one, accompanying this—the presence of pulsating vessels in the vaginal vault on the affected side. All the branches of the uterine artery are subject to very marked enlargement on the side of the pregnancy. It is often easy to touch a vessel the "pulse" of which is very comparable to that of the radial and, although inflammatory affections may sometimes give rise to very similar hyperæmia, the pulsation of the vessels is rarely so marked and so easy to elicit as in tubal pregnancy.

The next point is the finding of the extra-uterine tumour. If we turn to the sequence of illustrations which I used when describing tubal mole and peri-tubal hæmatocele[2] we shall at once recognise the leading features to be determined (if possible) by vaginal and bimanual examination. There is the tubal tumour caused by the misplaced pregnancy, its size, shape, position, and mobility, and there is the displacement (if any) of the pelvic viscera caused by its growth. When hæmatocele forms there may be the opportunity perhaps of following the alteration in the tumour produced by hæmorrhage—in watching the change from mobility to fixation, the rapid lateral and upward growth of the blood-mass, and the change from the insensitive little tubal tumour of the healthy and unruptured pregnancy to the acutely tender and extending hæmatocele. For at first, when the pregnancy forms within the tube, there is no pain or tenderness, and it is only by accidental good fortune that the opportunity arises for an examination under these conditions. In one case seen by me at this stage the patient had nothing to complain of except amenorrhœa of five or six weeks' standing, but to one side and behind the uterus a little movable tumour was plainly felt which, by its shape and its contiguity to the uterus, suggested a tubal rather than ovarian origin. Another observer describes the tumour under these conditions as "sharply limited from the unaltered part of the tube, as closely corresponding to the size of the ovum, and as elastic but yielding" (Winter).

Later, if bleeding occurs within the tube its enlargement is not limited to the site of pregnancy but the whole of the tube becomes distended, and this is the stage when the diagnosis of the tumour is attended with least difficulty. The tube is not only distended but hard, its sinuous curves are easily followed, its tubal or "sausage-shaped" character is readily ascertained, and if the hæmorrhage be limited to the interior of the tube and no blood as yet has invaded the peritoneal cavity there is still but little or no tenderness and a full examination may be made without difficulty or pain. The following illustration (Fig. 36) will, perhaps, convey better than words can do what may be felt under such conditions by vaginal touch and bimanual examination. It also indicates the usual limitations to complete investigation. The uterus is inclined to retroflexion; its highest part can, perhaps, be felt bimanually, but whether this be fundus or the upper portion of the anterior surface is probably uncertain. Behind the cervix a sausage-like tumour is plainly felt closely applied to the back of the uterus and probably adherent to it. In

FIG. 36.

some cases it seems to partially encircle the uterus like a collar. One curve of it is thoroughly felt and above this the beginning of another is just accessible. Beyond this point any further investigation by ordinary vaginal or bimanual examination may be impossible. Rectal examination will afford larger and higher opportunities, but this is inadvisable except in cases of serious doubt and difficulty when the patient remains under the personal observation of the surgeon.

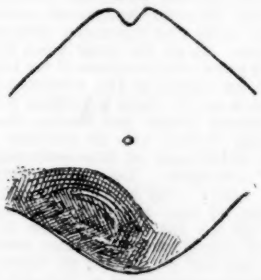
While the foregoing is a fair description of the tumour very generally found in cases of extra-uterine pregnancy it by no means follows that the tumour, or any tumour, is always met with in this situation. Sometimes the pregnant tube is altogether on one side of the uterus, the pouch of Douglas being quite empty, and when the uterus is much retroflexed the tumour may even be found in the front half of the pelvis, the pregnancy lying altogether anterior to the uterus. In this situation the tumour is very accessible to bimanual examination provided the bladder be empty. (The use of the catheter is always an important preliminary to a thorough examination of the pelvis.)

It might easily be supposed that, as hæmorrhage took place into the pelvis and the original distension of the tube was supplemented by the formation of a hæmatocele, so the resulting tumour would become increasingly prominent and more easy of diagnosis. But it is not so. With every bleeding into the peritoneal cavity there is pain, there is some collapse, and there is abdominal tenderness persisting for many days. The slightest pressure is objected to, the abdominal muscles are contracted, deep palpation is impossible, and any attempt at bimanual examination is apt to be most unsatisfactory. Furthermore, it will often be found on vaginal touch that the clearly-defined outlines of the tube are obscured or even lost in the swelling of the hæmatocele. There is evidently a tumour present and it appears to be connected with the Fallopian tube, but its upper limit cannot be palpated from the abdomen and its exact size and boundaries are uncertain. Here the displacement of the uterus, if definite and permanent, will afford valuable evidence as to the size of the swelling which causes the displacement. A little later, if the hæmorrhage is repeated and the hæmatocele increases, we find the upper limit of the swelling appearing above the pubes. In spite of the pain and abdominal distension there is then no difficulty in ascertaining the full extent of the tumour. Above one groin we usually find the convex outline of the mass arising from below. It is lateral, fixed, tender, and bulging, and may be conveniently represented in the usual way by the accompanying outline illustration (Fig. 37). The convex upper border of the mass is well marked. It is sometimes visible, it can be felt on gentle palpation, and tends to extend in an increasing curve towards the umbilicus. Below this line the percussion note is dull; above it, the adherent and probably distended intestine marks a clearly defined area of resonance. This applies to the central portion of the curve; each end of it shades off into inaccessible regions—on the one side toward

[2] Vide Figs. 8, 9, and 10, THE LANCET, May 28th, 1898.

the loin of the affected side, on the other beneath the pubes. Examined bimanually the abdominal mass above the groin is felt to be one with the tubal tumour in the pelvis and the displacement of the uterus to the non-affected side (which is now extreme) is marked and unmistakeable. This tumour, which is usually characteristic of the advanced

FIG. 37.

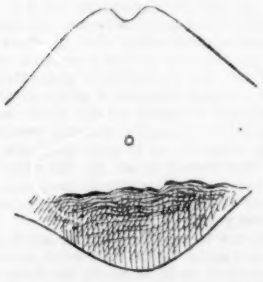


development of intra-peritoneal hæmatocele, the result of bleeding from the unruptured tube, and which then is produced somewhat slowly or after repeated hæmorrhages, may also be more suddenly formed by later rupture of the tube; and, so far as physical signs are concerned, there is no essential difference in the resulting hæmatoceles. The same description will accordingly apply to both formations.

Very similar, too, is the tumour formed by an intra-ligamentary pregnancy about the fourth month when the pregnancy is of the anterior or sub-peritoneo-pelvic variety. There is no difference except that the uterus is liable to be raised as well as displaced to the opposite side by the growing pregnancy and that in this case one is more liable to meet with the signs of a fixed iliac tumour growing into the abdomen above the groin without any symptoms of internal hæmorrhage, because under these circumstances the pregnancy may be uninterrupted by accidental changes. Frequently, however, disturbances do arise and then no differential diagnosis between the two hæmatoceles is possible until the abdomen is opened.

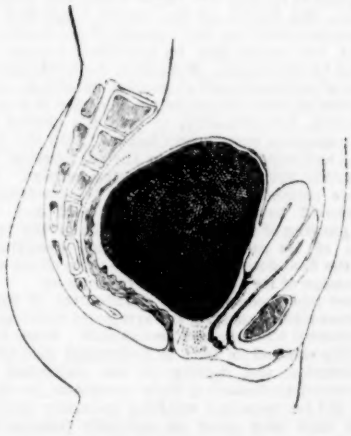
The only other tumour needing consideration at this stage is that of the typical retro-uterine hæmatocele when the pouch of Douglas is acutely distended, its opening above into the peritoneal cavity being temporarily occluded. The condition occurs but rarely as the result of tubal bleeding (an example is afforded by Case 2), but when it does take place the signs—both abdominal and pelvic—are very different from those I have already described. In the (two) cases I have seen the upper limit of the blood-mass was readily felt from the abdomen, but instead of being lateral, convex, and bulging it simply formed a hard, irregular wall or line stretching right across the abdomen, midway between the pubes and the umbilicus, the abdomen below this line being uniformly hard and dull with coagulated blood (Fig. 38). The active, grow-

FIG. 38.



ing, bulging pole of the tumour in this hæmatocele was transferred (as it were) from the abdominal to the pelvic aspect. The abdomen was quiescent; the pouch of Douglas was acutely distended. With one finger in the vagina and the other in the rectum the tense elastic swelling of the over-filled pouch could be thoroughly appreciated, bulging between the two. The leading features of this hæmatocele are well represented in the following illustration. (Fig. 39.) The

FIG. 39.



small intestines lie across and somewhat flatten the upper boundary of the blood-mass, while the fold of peritoneum between the vagina and rectum is transformed into a large sac full of blood and serum.

The next point is the determination of the size, position, and contents (if any) of the uterus. The uterus is nearly always slightly enlarged, the enlargement bearing a strong resemblance to that of the sub-involuted uterus after confinement and having but little in common with the broad and succulent enlargement of the pregnant organ. It is slightly thicker and longer than normal, as a bleeding uterus generally is, but the cervix is not specially soft and yielding, and

FIG. 40.

The tumour and the uterus in close relation.

if this be followed up by the finger beyond the vaginal reflexion and the tumour of the extra-uterine pregnancy or hæmatocele be encountered in its (close) relation to the uterus somewhere in the pelvis the cervix may often be followed beyond and above the lower limit of the tumour and the uterus may be felt something like a finger fixed to one side of the tumour. (Figs. 40 and 41.)

FIG. 41.

The tumour and the uterus in cross section.

We have already traced the early tendency of the uterus towards retroflexion and its later displacement to one side of the pelvis. Generally with the larger hæmatoceles produced by recurrent bleedings, and always in true retro-uterine hæmatocele, which we have just been considering, the uterus is strongly displaced forwards. When the pouch of Douglas is excessively distended it may also be carried upwards so that the cervix is difficult to reach. The exact position of the fundus and the emptiness or non-pregnant state of its cavity are very important, and sometimes very difficult, points to determine, but they must be decisively settled before any operation is undertaken. On careful bimanual examination, if (as already described) the supra-vaginal

cervix has been traced upwards by the examining finger from below, the direction of the uterus is followed as far as possible and the probable situation of the fundus—toward the front or the side of the pelvis—is definitely determined. Then, if the hand on the outside of the abdomen be carried to this point in spite of the larger displacing tumour of the pregnancy, the fingers of the outside hand may often be gently pressed down on the summit of the fundus and the whole of the uterus may be accurately mapped out (bimanually) by the fingers. Sometimes the conditions—the coexistence of peritonitis and abdominal distension—make such examination an utter impossibility, and then it may not only be allowable, but necessary, to pass the uterine sound in order to come to a certain conclusion. Both the passage of the sound and rectal examination should, however, be left to the discretion and use of the operating surgeon. All other reasonable methods for determining the condition of the uterus should have been previously used and the same delicate gauging of the probable position of the fundus and direction of its cavity as that already described should precede the final determination of the curve of the sound and of the passage of its tip within the external os.

We have now concluded the examination of the patient, but we have still to consider the symptoms which accompany intra-peritoneal bleeding and hæmatocele. Some have been incidentally referred to, such as abdominal pain and tenderness, distension, and rigidity of the abdominal muscles. The characteristic feature of these symptoms, as also of the collapse and faintness and vomiting generally accompanying them, is that they come on suddenly because they are directly due to the bleeding, and if the bleeding be slight or moderate they rather quickly diminish in intensity or entirely disappear. For instance, a patient suffering in this way may feel perfectly well all day, be attacked with sudden violent pain at 11 P.M., feel seriously ill for half the night, have a good sleep towards morning, and be attending to her usual household duties in the course of the following day. These attacks, in the same way as the bleeding which we have studied before, are almost inevitably recurrent, so that in a large number of cases treated by operation we have a clear history of three or four attacks before the abdomen is opened. The suddenness of these attacks is very frequently surprising to the patient herself. One of my patients in whom they occurred during the daytime gave a history of a fall with each attack, evidently supposing that the pain from which she suffered was the consequence rather than the cause of the fall in each case. Some of the remarks of the patients are as follows: "I was suddenly seized with pain on the left side of the belly, in the back, and in the thigh. I was bent double with it." "I was seized with sudden pain in the lower part of the stomach soon after getting out of bed." "I was seized with sudden pain three weeks ago on returning from church on Sunday, violent abdominal pain and vomiting being my chief symptoms. The pain was repeated on the following Thursday and Saturday and twice during last week." Vomiting very generally accompanies the attacks but is not persistent. At first the patient usually speaks of the pain as being all over the abdomen, but when questioned can generally differentiate one side as being more painful than the other. If the bleeding increases, and always if the hæmatocele extends above the groin into the abdomen or really fills and distends the pouch of Douglas, the condition of the patient becomes permanently serious—she is confined to her bed with abdominal pain and tenderness. She is, as a rule, visibly anæmic from the loss of blood; there is either present or there is the clear history of some acute peritonitis following the last attack. The pulse is quick and feeble—probably 120 or more. There may be considerable pyrexia, the temperature rising to from 100° to 103° F., and in a certain proportion of cases there is slight but decided albuminuria. This last symptom appears in some way to be directly due to the blood effusion, for in the cases in which I have observed it it has promptly disappeared after operation. The pyrexia in intra-abdominal hæmatocele is probably due to re-absorption of blood and need not be regarded as septic. When the peritoneum has been lifted from the rectum or the pouch of Douglas is shut off from the rest of the peritoneal cavity and this is acutely distended with blood the pyrexia which slowly comes on is of quite a different character. The proximity of the rectum, the anterior coat of which is stretched and thin or the serous covering of which may be defective, favours the passage of septic matter from the bowel into the hæmatocele; decomposition of the blood generally occurs and the temperature may rise to 104° or 105°. The iliac hæmatocele or the pouch of Douglas becomes further distended by inflammatory effusion, and all the symptoms of septic absorption are probably present. Apart from this condition the chief value of the symptoms is as a measure of the importance and severity of the internal bleeding. The anæmia, the faintness, the collapse, the vomiting, the abdominal pain, and the peritonitis will vary in direct ratio to the bleeding. If such symptoms are produced slowly they point to tubal mole with increasing hæmorrhage from the unruptured tube. If, on the other hand, they are produced suddenly they point to later rupture of the tube.

With this we complete the consideration of all the elements which go to form a positive diagnosis of extra-uterine pregnancy before and during those disturbances to its progress which are so common in the earlier months—the disturbance of intra-peritoneal bleeding and hæmatocele formation. Let us briefly recapitulate them: We have:—(1) A patient within the child-bearing limits of age, and one in whom a pregnancy is possible; (2) she has recently been in good health; (3) it is more likely than not that several years have passed since her last pregnancy; (4) there is a history of some amenorrhœa accompanied or followed by (5) irregular uterine hæmorrhage, dark in colour, moderate in amount, and persistent in its course; (6) with this there may be the history of the passage of some membrane, either in one pouch or bag as a "complete decidua," or in two pieces, or in shreds; (7) on examination pulsating vessels may be felt in the vaginal vault on one side of the uterus; (8) on this side also, and closely investing the back of the uterus, there is nearly always a tubal tumour (exceptionally this may have a different or curious situation); (9) this tumour enlarges markedly and suddenly by recurrent hæmorrhages and by the formation of a hæmatocele directly continuous with the original tubal tumour; (10) these hæmorrhages are signalised by sudden spasms of severe abdominal pain and by transient attacks of peritonitis; (11) the uterus is displaced by the hæmatocele at first backwards, afterwards to the opposite side of the pelvis, and sometimes forward (against the pubes) (it is very rarely that the uterus is permanently displaced downwards); and (12) the uterus throughout, although slightly enlarged, may be proved to be empty.

The differential diagnosis still remains for us to consider. Extra-uterine pregnancy under the conditions I have been describing may be mistaken for: (1) pyosalpinx, with amenorrhœa; (2) myoma; (3) simple abortion; (4) retroflexion of the gravid uterus; (5) anteflexion of the gravid uterus; and (6) twisted pedicle tumours—(*a*) of the tube, and (*b*) of the ovary.

1. Pyosalpinx is usually accompanied by regular menstruation, menorrhagia, or metrorrhagia. Every now and then, however, in double pyosalpinx (when the ovaries have probably been rendered temporarily functionless by dense enveloping adhesions) there is total amenorrhœa of from two to three or four months' standing, and then the symptoms and signs may be almost identical in the two conditions. The pyosalpinx will afford us a typical tubal tumour, and when both sides are affected the tube of the one side is nearly always very much more distended than that of the other, so that the main tumour is one-sided. The inflammatory thickening and adhesions closely surrounding the tube may simulate a hæmatocele. A pinhole perforation of the distended tube may cause abdominal pain, collapse, vomiting, and a consequent attack of peritonitis, and in short there may be nothing but the history to guide us to a wise and correct diagnosis. Here, the immediately preceding health or ill-health of the patient becomes a point of high importance. If the pyosalpinx be quite recent there will still be the history of purulent vaginal discharge preceding the pelvic inflammation, while if, as is more probable, the pyosalpinx be an acute recrudescence of an old affection the patient may confess to some similar attack two, three, or four years previously and to some tenderness or aching in one side during all these years.

2. The likeness to myoma is most marked when a tubal hæmatocele, not quite recent and hard from coagulation of the blood contained in it, is firmly fixed on one side of the uterus and is free from all other connexions. Then if the observer's mind be fixed on the condition of the uterus as a cause for continued uterine hæmorrhage and if on bimanual examination he can thoroughly palpate a globular immoveable "boss"—not specially tender—on one side of

the fundus uteri, he may easily imagine the case to be a clear one of myoma. Case No. 37 may be taken as an example. Mrs. K was sent to me as suffering from cancer of the uterus causing continued uterine hæmorrhage. The cervix was badly lacerated and diseased, but no certain sign of cancer could be detected. On further examination a hard tumour or out-growth was felt extending from the fundus. It moved with the uterus and had no other connexions. Here was the source of the bleeding. Yes; but not the source imagined. Instead of the myoma too hastily

FIG. 42.

Diagrammatic representation of uterus and tumour as felt in Case 37.

diagnosed the tumour was a peri-tubal hæmatocele around an early tubal pregnancy. A more careful attention to the history would have prevented such an error and would generally direct the thoughts into a right channel when extra-uterine pregnancy is present. In the present instance there was a history of acute abdominal pain corresponding to the formation of the hæmatocele and any attack of this kind is unknown or very unusual in myoma.

3. An extra-uterine pregnancy which has resulted in tubal mole and hæmatocele may easily be regarded as a simple abortion by any one who depends entirely on symptoms, for these may be very similar in both affections, the peritonitic pains of the one being closely simulated by the painful uterine cramps of the other. On vaginal examination, however, the two conditions are at once differentiated or the "abortion" is shown to be no simple one by the presence of a tumour outside the uterus. When the conditions are unfavourable for full examination, or when there are any grounds for supposing that a tumour may be present but inaccessible, great caution is needed. The interference that would be right in incomplete abortion may be very harmful when the main source of irritation is outside the uterus. No. 36 is a case in point. Mrs. L came to my out-patient room at the hospital with all the symptoms of an early abortion, and at her first visit I could find no trace of any tumour, the abdomen being rigid and the conditions generally unfavourable for full examination. The uterus was enlarged, the cervix was soft and open, and the hæmorrhage had been continuous for four weeks. Diagnosis was deferred. Some few days afterwards the uterus was dilated by the physician in attendance at the patient's home. Nothing was found within it. Severe abdominal pain set in coincidently with the dilatation. I saw the patient again, recognised a tubal pregnancy on the right side of the uterus, admitted her into the hospital, and operated. The tube was ruptured, the placenta protruding. There were also recent inflammatory adhesions about the tube and uterus.

4. Retroflexion of the gravid uterus has been recognised by most authors as a condition needing careful differentiation from extra-uterine pregnancy, because unfortunate cases have been recorded in which a distended tube in Douglas's pouch has been supposed to be the pregnant retroverted fundus and an injudicious attempt at its replacement (?) has ruptured the tubal sac and hastened the death of the patient. When one knows this and recognises the danger of any interference before a certain diagnosis is formed it will be found excessively rare or impossible for any similar mistake to recur. The position of the fundus must be ascertained by careful bimanual examination; its presence or its absence in front of the tumour must be satisfactorily determined. When there is any tumour other than the fundus filling the pouch of Douglas the whole of the uterus (generally quite straight) is pushed against the pubes; the cervix is looking directly downwards and if the bladder be empty the fundus may be felt on gentle pressure immediately above the pubes. When the pregnant fundus is in the pouch of Douglas there is of course no fundus to be felt in front of the tumour. Bimanually the fingers of both hands may perhaps be so closely approximated above the pubes that the cervix may be felt to be continuous with the posterior tumour and absolutely free from any other connexion. Retention of urine is more common in retroflexion of the gravid uterus while a discharge of blood (unattended with labour pains) is more common in extra-uterine pregnancy.

5. Anteflexion of the gravid uterus, although but rarely recognised as a possible source of error, may occasionally be quite as perplexing as the gravid retroflexion. Whether from an unusually high attachment of the impregnated ovum—quite at the fundus uteri—or from some other cause less easy to understand, a pregnant patient, usually a primipara, is sometimes found who suffers from severe pains during the early months of pregnancy and in whom the two or three months pregnant fundus forms a globular elastic tumour which appears to have little or no real continuity with the cervix (Fig. 43). The cervix remains

FIG. 43.

Diagram of anteflexed pregnant uterus with lengthened but undeveloped cervix.

thin, hard, undeveloped, pencil-like, and runs behind the tumour of the pregnancy as far as the finger can reach. Further, it is absolutely lengthened, so that it feels as if the whole of an infantile or ill-developed uterus was to be explored behind a sac of pregnancy. I have even known a sound passed to the top of the lengthened but undeveloped cervix under these conditions give almost or quite the normal uterine measurement, produce no abortion, and in this way afford to the practitioner who used it confirmation of his (mistaken) opinion that the pregnancy was outside the uterus. Again, the knowledge that such cases occur is the surest safeguard against error. Sometimes the round ligament can be felt on each side of the distended fundus, and if so it is certain that the tumour felt is the uterus itself. If serious doubt remains in spite of ordinary careful methods of examination (which should *not* include the passage of the sound) it may be a relief to remember that extra-uterine pregnancy as well as intra-uterine pregnancy in a misplaced uterus does not as a rule cause urgent danger or need immediate interference so long as there is no sign of uterine discharge. If the patient be kept in bed she may remain under observation until the condition becomes clearer or until a more experienced opinion can be obtained.

6. Twisted pedicle tumours—(*a*) blood tumours of the tube from twisted pedicle, and (*b*) blood tumours of the ovary from twisted pedicle. Small tumours of the tube or ovary arising from or increased after twisting of the pedicle are very liable to be mistaken for misplaced pregnancies which have resulted in internal hæmorrhage. Not only are the signs and symptoms extremely similar, but the physical condition, the resulting hæmatoma or hæmatocele, may be almost alike in the two conditions. When accompanied, as they sometimes are, with menstrual irregularity the history also may favour the suspicion of a tubal pregnancy with hæmatocele. The sudden abdominal pain which characterises the final twist when the return circulation is obstructed, the vomiting and faintness which accompany this, and the rapid formation of a prominent and tender tumour, are all suggestive. The tumour itself, however, is not so intimately connected with the uterus as a tubal pregnancy would be. Whether formed by the tube or the ovary it has rather the character of an ovarian enlargement, and unless adherent to the uterus there is quite generally some unoccupied space to be discovered between the uterus and the tumour. The following cases are illustrative:—

Mrs. M, aged twenty-nine years, had been suckling her second child for six months when she was suddenly seized with severe abdominal pain on the left side. The pain continued. When examined some days later the following note was made: "A soft (cystic) elongated body, probably tubal, is felt behind the uterus." The patient had not menstruated since her confinement. The case was watched

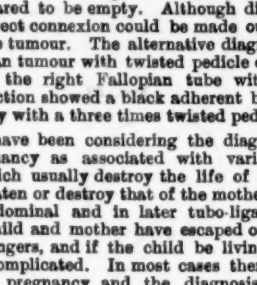
for a time and before operation the diagnosis was entered of adherent tumour of the left ovary and tube. Abdominal section showed a torsion blood-cyst of the left Fallopian tube.

Mrs. N, aged thirty-seven years, menstruated regularly until six weeks ago. On March 24th (five weeks after her last menstruation) she was suddenly seized with severe abdominal pain, fainting, and sickness. This occurred at night and the pain has continued ever since. On examination a globular, tender tumour of about the size of a child's head was felt above the pubes on the right side. The uterus was displaced to the left by the tumour; it was of normal size and appeared to be empty. Although displaced by the tumour no direct connexion could be made out between the uterus and the tumour. The alternative diagnosis was made of right ovarian tumour with twisted pedicle or extra-uterine pregnancy in the right Fallopian tube with hæmatocele. Abdominal section showed a black adherent blood tumour of the right ovary with a three times twisted pedicle.

So far we have been considering the diagnosis of extra-uterine pregnancy as associated with various disturbing influences which usually destroy the life of the fœtus and seriously threaten or destroy that of the mother also.

In tubo-abdominal and in later tubo-ligamentary pregnancy both child and mother have escaped or "weathered" these early dangers, and if the child be living the diagnosis is much less complicated. In most cases there is but little doubt of the pregnancy and the diagnosis then mainly resolves itself into a differential one between intra- and extra-uterine pregnancy. When the child has been a long time dead and the history of the pregnancy is no longer recent, the question of any pregnancy may be very doubtful and the diagnosis again may become perplexing and

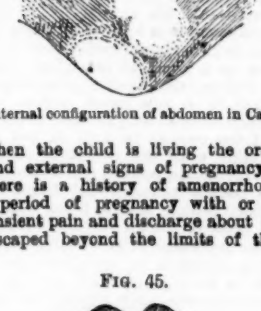
FIG. 44.



External configuration of abdomen in Case 3.

obscure. When the child is living the ordinary history, symptoms, and external signs of pregnancy are probably present. There is a history of amenorrhœa corresponding to the period of pregnancy with or without some history of transient pain and discharge about the time when the fœtus escaped beyond the limits of the tube. The

FIG. 45.



External configuration of abdomen in Case 33.

patient herself has possibly passed through the troubles and sensations generally incidental to a normal pregnancy—the morning sickness, unusual cravings of appetite, and the period of quickening. The mammary signs, pigmentation of the areola and follicular development round the nipple (never very reliable), are more likely to be present than wanting. There is turgescence and bluish discolouration of the vulva and vagina. The mother is usually very conscious of the movements of the child and if she have experience of former (normal) pregnancies may perhaps complain of its unusual position.

In tubo-abdominal pregnancy during the latter months the fœtus is immediately recognisable on examining the abdomen, sometimes on simple inspection and always on light palpation (Figs. 44 and 45). The fœtus and placenta are probably lateral or zigzag in position, but the fœtus may permit of passive movement into a more central situation. The ease and clearness with which its various parts can be palpated are quite remarkable; these may be felt to be lying immediately beneath the abdominal walls and the mother may bitterly complain of pain from the fœtal movements. A limb can, perhaps, be taken hold of and the beating of the fœtal heart can be heard with unusual clearness. The parts of the pregnancy most liable to be mistaken for each other are the placenta and the head. The placenta being almost certainly attached to the tube should be lower in position. While the hands of the observer are examining the child there is no clear indication of any containing sac alternately expanding and contracting around the fœtus. On vaginal and bimanual examination the uterus may be found displaced to one side of the pelvis, only slightly enlarged and obviously distinct from the child. If this be so the position of the child is certainly extra-uterine and the apparent absence of any covering argues a tubo-abdominal pregnancy rather than a tubo-ligamentary one.

Is the uterus definitely and decidedly distinct from the pregnancy? This is the all-important question, for nearly everything I have described as characterising the abdominal position of the child may be wonderfully simulated by a normal intra-uterine pregnancy when the walls of the uterus are unusually thin. This extraordinary thinness of the uterine walls occasionally encountered with or without "hydramnios" or excess of the amniotic fluid has been noticed by many observers. One of the first to remark it was Dr. Ingleby, in 1834. In its extreme condition it is very curious and needs to be seen in order to be thoroughly believed. The fundus uteri cannot be found apart from the pregnancy, and this should excite the strongest suspicion *against* an extra-uterine position for the child. If the independent existence of the uterus cannot be demonstrated, especial care and patience should be employed in watching, with the hand on the abdomen, for the slightest indication of a uterine contraction. If the loosely-lying limbs of the child do temporarily disappear and give place to the rounded arch, however feeble, of a containing sac, the presumption is in favour of an intra-uterine pregnancy.

In tubo-ligamentary pregnancy, before the child is sufficiently formed to be detected by palpation there may be an opportunity for diagnosing the condition, as in the two cases I mentioned at the beginning of this lecture. From the experience there described it would appear that in the posterior ligamentary variety the tumour of pregnancy may be so centrally situated and the uterus so united to it—probably so spread out on its anterior surface—that early pregnancy within the uterus is very closely simulated. Rectal examination might materially assist the examiner under such conditions and will, I hope, prove of future service in the early detection of this variety. In the later stages of the tubo-ligamentary pregnancy when the child is living many of its features are very comparable to those described as existing in the abdominal variety but are less marked. The tumour of the pregnancy is probably lateral or eccentric. Though contained in a sac, the latter is very likely not of uniform thickness and in some parts the child may seem to be very near the surface and may be more easily palpated than when *in utero*. This especially applies to the anterior or sub-peritoneo-abdominal variety where part of the sac of pregnancy may be between the peritoneal reflexion and the skin. Abdominal *ballottement* of the fœtus is often very marked and the fœtal heart-beats are well heard. Sometimes the fœtal limbs are lying in the pouch of Douglas and are then palpated with great facility (Winter). As the child has been originally formed below the placenta the latter will probably have a higher position than in tubo-abdominal pregnancy and internal hæmorrhage from displacement (with faintness, blanching, and fatal collapse) may arise. The fœtal movements, active and passive (*ballottement*), and the auscultation of the fœtal heart and of the placental

souffle, will testify to the fact of pregnancy, but dependence must be placed on careful vaginal and bimanual examination for the detection of its abnormality. The cervix is displaced and the rest of the uterus is pushed (generally) to one side and downwards below the sac of pregnancy.

The differential diagnosis at this stage consists in the separation of advanced abdominal and tubo-ligamentary pregnancy from — (1) normal intra-uterine pregnancy, (2) pregnancy in one half of a double uterus, and (3) pregnancy in one horn of a bi-cornuate uterus.

1. In tubo-ligamentary pregnancies the uterus is in much closer relation to the pregnancy than in the tubo-abdominal form. It is often intimately incorporated with one side or aspect of the sac as it so often is in other intra-ligamentary tumours when these form. In spite, however, of this the solid thickness of its body traced upwards from below, the undeveloped state of the cervix, and the palpable emptiness of its cavity, all emphasised more strongly the nearer the pregnancy approaches to term, will hardly fail to guide the observer to a right conclusion. If the sound be used to confirm that opinion it must be remembered that the uterus is often greatly stretched by the growth of the pregnancy, but there will be no free movement of the sound within the cavity of the uterus. As already stated, regular contractions and relaxations of the sac are strongly suggestive of an intra-uterine position. Whether these ever occur in a ligamentary sac containing some muscular structure is doubtful. This is a point which requires further observation.

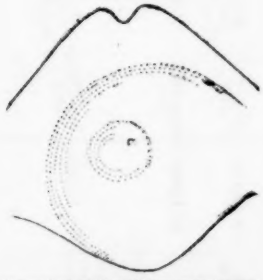
2. Pregnancy in one half of a double uterus is only perplexing to those who have no knowledge of the condition. The double cervix seen through a vaginal speculum will at once suggest the possible explanation of any abnormality and the non-pregnant uterus can be isolated from the pregnant one by passage of the sound.

3. Pregnancy in one horn of a bi-cornuate uterus is more difficult, especially if the non-pregnant horn be considered to be the body and fundus of the uterus. The condition (like the preceding) is a very rare one, but so also is an extra-uterine pregnancy to the ordinary accoucheur. If no serious symptoms are present and labour appears to be proceeding as usual the child in one horn of a bi-cornuate uterus will probably be born without difficulty. In some of these cases, however, there is no perfect communication between the pregnant horn and the cervix, and when this is the case the birth of the child is quite as impossible without operation as it is in true extra-uterine pregnancy.

In all extra-uterine pregnancies which go to term there is a more or less well-marked period of false labour and with this we have certain warnings, opportunities, and signs which should be of special interest to the accoucheur. The latter is usually sent for on the supposition that labour is beginning and it is of very great importance that this opportunity for diagnosis and advice should not be neglected. Whenever the cervix is found to be small and somewhat displaced and to have no proportionate relation to the history and symptoms of a full-term pregnancy the case should be thoroughly investigated and a full examination made. Especially care is necessary that the complaint of the patient be not lightly dismissed as simply a "false alarm." In extra-uterine pregnancy the "pains" are abdominal and are chiefly connected with the movements of the fœtus. They are probably accompanied by some vaginal discharge and sometimes by the expulsion of membrane. The pains last for several days, often preventing sleep. Finally they cease—cease suddenly—and the movements of the child are no longer felt. Soon after the breasts enlarge and temporarily fill with milk, but no encouragement being afforded to its flow the draught soon ceases. All symptoms directly connected with the pregnancy (except the enlargement of the abdomen) permanently subside and the patient either enjoys a moderate amount of health and resumes her usual duties carrying her dead child with her, or septic changes occur within the sac, rigors and fever follow, and the patient drifts into a "typhoid" state from which nothing but the removal of the putrid contents of the sac can rescue her.

This brings us to the consideration of the second division of full-term extra-uterine pregnancy—viz., when the child is dead. In tubo-abdominal pregnancy the child is in all cases so easily distinguished that notwithstanding all movement is lost there is but little real difficulty in the diagnosis. The shape of the abdominal tumour, and especially the detection of the fœtal limbs through the abdominal parietes, combined with the evidence of an empty uterus, will in all cases establish the nature of the case. The differential diagnosis from intra-uterine pregnancy, which before "term" and when the child was living we found to be of first importance, is now (probably) no longer necessary and the diagnosis is correspondingly lightened. But in the tubo-ligamentary pregnancy, and especially in the posterior ligamentary form, the diagnosis is often rendered exceedingly obscure and difficult by the death of the fœtus, the more so when several months have elapsed since its life was ended. Menstruation may have been re-established and the patient does not necessarily volunteer the slightest information which would direct the mind toward the causation of the tumour. There is, of course, no fœtal heart-beat, no fœtal movement, no placental *souffle*, the patient's breasts have lost all indication of a pregnant state, and if septic disturbance has already taken place the patient may be in no condition to answer intelligently the questions of the examining surgeon. There is nothing but the large fixed abdominal tumour, the nature of which may be hidden by the thickness of its walls (Fig. 46). The suspicion of pregnancy,

FIG. 46.



External configuration of the abdomen in Case 4. The inner circle near the umbilicus marks an area of less resistance within which it was possible to palpate the fœtus.

while the tumour was forming, if alluded to, is so common among all women with gradual abdominal enlargement that its significance is very easily unrecognised. No class of case may require more painstaking patience and perserverance in its investigation. Little by little, however, the history of the pregnancy may be gathered. The nine months' slow enlargement of the abdomen, the amenorrhœa, the fœtal movements (?), the spurious labour or something corresponding to it, the history of the breast-signs, all should be inquired after and their presence or absence noted. Sometimes on deep palpation of the tumour one may feel the resisting body of the fœtus after displacement of the fluid which surrounds it—a valuable sign, which can only be simulated by a solid tumour, probably papillomatous or malignant, floating in a cystic cavity. The differential diagnosis under these conditions will be from ovarian tumour—single, suppurating, or malignant. The mimicry of the last condition to extra-uterine pregnancy with retained fœtus may be curiously complete. In one case on which I operated the patient had a large abdominal tumour which had been forming for twelve months. Menstruation had ceased from the first appearance of the tumour. The patient considered herself pregnant and prepared for the birth of the child. The medical man was engaged for the confinement and at the end of nine months some kind of spurious labour (or what was taken for such) undoubtedly took place, but no child was born. When I saw her some three months later she had rapidly emaciated, there was evening pyrexia, and the abdomen was greatly distended by an irregular tumour more marked on one side of the body. On vaginal and bimanual examination the uterus was found to be independent of the tumour and empty, and on palpation in the pouch of Douglas the finger after displacing fluid felt two solid bodies which resembled the feet and ankles of a fœtus at full term. At the operation there was malignant tumour of both ovaries with localised ascites and two moveable malignant nodules floating in the pouch of Douglas. In difficult cases the evidence may be insufficient to warrant a certain single diagnosis, but it should be sufficient to offer an alternative selection and to guard the surgeon from any

TABLE OF CASES OF EXTRA UTERINE PREGNANCY.

No.	Age.	Married.	Children	Youngest.	Last menstruation.	Signs.	Symptoms.	Diagnosis.	Remarks.	Medical attendant.	Date of operation.	Place.	Present.	Particulars.	Sequel.
1	38	—	2	12	11 weeks.	Right side tumour.	Pain and emaciation.	—	Marked albuminuria.	Mr. Barratt.	March 7th, 1888.	Women's Hospital, Birmingham.	Dr. S. T. Ricketts (U.S.A.) and Dr. A. Clark.	Large fœtus and placenta (from 3 to 4 months).	Left hospital March 28th; recovery.
2	32	—	4	2	17 weeks.	Tumour on left side and behind uterus.	Pain on left side; irregular bleeding two months, after amenorrhœa two months; in bed four weeks.	Tubal pregnancy.	—	Dr. Lynes.	June 14th, 189 .	Do.	Mr. F. H. Maberly, Dr. Baker, and Dr. Eccles (U.S.A.)	Large unruptured tube containing mole.	Left June 28th; recovery.
3	35	—	4	11	9 months.	Child felt in abdomen; uterus empty; fœtal pulse very audible.	Hæmorrhage and pain after 2 months amenorrhœa (time of rupture).	Abdominal pregnancy.	—	Dr. Lycett.	June 24th, 1890.	Wolverhampton Hospital for Women.	Dr. Lycett, Dr. C. Smith, and Dr. Hubbersty.	Removal of child; removal of placenta.	Left Oct. 4th; recovery.
4	36	6 years.	3	2	12 months.	Large abdominal tumour.	Septic; rigors; pyrexia; in bed for 2 months.	Extra-uterine pregnancy with dead fœtus.	—	Dr. Cook.	Feb. 27th, 1891.	Private hospital.	Dr. L. Phillips and Dr. Robinson (U.S.A.)	Cyst of pregnancy sewn to incision.	Left April 10th, 1891; recovery; subsequent normal pregnancy and good delivery.
5	44	—	4	5	8 weeks.	Tubal tumour behind uterus.	Constant loss for 8 weeks.	Tubal pregnancy.	—	Dr. D. C. Martin.	July 13th, 1891.	Women's Hospital, Birmingham.	Dr. Bull and Dr. Melson.	Right tubal mole, unruptured, in middle portion of tube; abdomen re-opened for obstruction.	Left July 25th; recovery.
6	33	—	1	7	5 weeks.	Boggy mass in pouch of Douglas.	Symptoms of internal bleeding; abdominal pain; pulse 135.	Ruptured tubal pregnancy.	—	Dr. Bernays.	Jan. 29th, 1892.	Patient's home.	Dr. Bernays and Dr. Phillips.	Left tube ruptured, removed; diffuse hæmorrhage.	Recovery.
7	39	Second time for 8 years.	4	13	(?)	Fixed tender cyst behind uterus.	Irregular loss for 3 months.	Ovarian cyst.	—	J. W. T.	April 20th, 1892.	Women's Hospital, Birmingham.	Dr. Melson.	Right tubal pregnancy, with encapsulated hæmatocele (unruptured).	Left May 8th; recovery.
8	26	7 years.	1	6	2 months.	Small painful tumour behind uterus.	Amenorrhœa 5 weeks followed by loss for three weeks; abdominal pain and pain on defecation.	Tubal pregnancy.	—	J. W. T.	July 4th, 1892.	Do.	Dr. Phillips.	Right tubal mole; tube unruptured; hæmatocele partly encapsulated.	Left July 18th; recovery.
9	39	17 years.	5	11	14 weeks.	Tender tumour in pouch of Douglas; uterus retroflexed.	Amenorrhœa 5 weeks followed loss for 9 weeks; abdomen distended and tender; legs drawn up.	Ruptured tubal pregnancy.	Slight albuminuria.	Dr. Holdsworth.	Sept. 15th, 1892.	Do.	Dr. Phillips.	Right tubal pregnancy removed; free hæmorrhage; tube unruptured; rupture of hæmatocele.	Left Oct. 8th; recovery.

10	31	3 years.	2 miscarriages	—	10 weeks.	Mass to right of pubes; pouch of Douglas distended.	Sudden repeated attacks of abdominal pain.	Ruptured tubal pregnancy.	Slight albuminuria.	Mr. H. H. H. Addenbrooke.	Oct. 11th, 1892.	Do.	Dr. Phillips, Dr. Williams, Dr. Edge, Dr. De la Chérois, and Mr. Addenbrooke.	Right broad ligament pregnancy; free bleeding; pulse 156.	Left Nov. 13th; recovery.
11	37	Nearly 11 years.	1	10	9 weeks.	Mass in Douglas's pouch reaching above pubes.	Amenorrhœa 6 weeks followed by irregular loss and pain and latterly pyrexia; temperature from 99° and 101·4° to 104·8° F.	Ruptured tubal pregnancy; hæmatocele.	Took herbs to bring on abortion.	Dr. Fitzpatrick.	Jan. 6th, 1893.	Private hospital.	—	Vaginal section and clearing out; drainage.	Left Jan. 23rd, 1893; recovery.
12	27	4 years.	2; 1 miscarriage.	7½ months.	(?)	Tender hard mass behind uterus.	Sudden abdominal pain 5 weeks before, followed by irregular loss; no amenorrhœa.	Ruptured tubal pregnancy.	—	Mr. Jephcott.	Jan. 19th, 1893.	Do.	Dr. Phillips.	Right tubal pregnancy removed; tube itself unruptured; rupture of hæmatocele.	Left Feb. 3rd; recovery.
13	23	4 years.	0	—	7 weeks.	Fixed tense elongated tumour behind uterus.	Ill 10 weeks with abdominal pain.	Tubal.	—	Dr. T. A. Brown.	June 6th, 1893.	Women's Hospital, Birmingham.	Dr. Phillips, Dr. Martin, Mr. Jordan, and Dr. Collins.	Unruptured mole of left tube removed; hæmatocele.	Left June 27th; recovery.
14	32	14 years (second time for 5 years).	2 (premature).	6	9 weeks.	Mass behind uterus reaching above half way to umbilicus.	Sudden severe abdominal pain 10 days before operation; continuous loss for 9 weeks.	Ruptured tubal pregnancy.	Trace of albuminuria.	Dr. S. S. Dunn	July 15th, 1893.	Do.	Dr. Phillips, Dr. Martin, Mr. Jordan, and Dr. S. S. Dunn.	Right tubal pregnancy removed; tube itself unruptured, but recent rupture of large hæmatocele about fimbriated end of tube.	Left Aug. 2nd; recovery.
15	25	1½ years.	1	5 months.	5 weeks.	Mass to left of pubes and behind uterus, tender, fixed.	Loss for 5 weeks; seized with sudden pain 2 weeks ago; "bent double with it."	Ruptured tubal pregnancy; hæmatocele.	—	Dr. A. Clark.	Jan. 30th, 1894.	Do	Mr. Jordan and Dr. Edge.	Left tubal mole and hæmatocele with peripheral adhesions; mole at outer end of tube; rupture of tube, clot protruding.	Left Feb. 19th, 1894; recovery.
16	32	7 years.	0	0	(?)	Hard mass to right of uterus.	Irregular loss for 3 months.	Myoma.	—	Mr. J. J. Hues.	Feb. 15th, 1894.	Do.	Mr. Jordan and Dr. Martin	Old right tubal pregnancy unruptured.	Left March 1st; recovery.
17	27	5 years.	1	1	5 weeks	Small mass behind uterus; abdomen distended, soft, fluctuating.	Irregular loss for 5 weeks; acute seizure of abdominal pain 6 days before operation; much worse for 12 hours.	Ruptured tubal pregnancy.	Mitral regurgitation; murmur first noticed after operation.	Dr. O. Shaw.	May 12th, 1894 (1.0 A.M.).	Patient's home.	—	Right tube (ruptured) removed; diffuse hæmorrhage.	Recovery; subsequent normal pregnancy; delivery July 8th, 1896.
18	39	6 years	2	3	"Regular."	Large round cyst, reaching above pubes in front of uterus.	"Inflammation 3 years ago"; an acute attack of abdominal pain and sickness 2 weeks ago.	Ovarian cystoma.	—	Dr. Cranstoun.	Sept. 4th, 1894.	Private hospital.	Mr. Jordan.	Right ovarian dermoid; left tubal pregnancy (unsuspected); fœtus well formed.	Left Oct. 5th; recovery.
19	27	½ year.	1 miscarriage 3 months ago.	—	(?)	Large tender mass behind and to left of uterus.	Pain in left side ever since miscarriage; unable to walk or work.	Tubal pregnancy.	—	Mr. Clarkson.	Dec. 1st, 1894.	Do.	Mr. Jordan.	Left tubal pregnancy and hæmatocele; peripheral adhesions; tube probably unruptured; fimbriated end widely opened out.	Left Dec. 19th; recovery.

TABLE OF CASES OF EXTRA-UTERINE PREGNANCY—(*Continued.*)

No.	Age	Married.	Children.	Youngest.	Last menstruation.	Signs.	Symptoms.	Diagnosis.	Remarks.	Medical attendant.	Date of operation.	Place.	Present.	Particulars.	Sequel.
20	27	8 years.	3	4	11 weeks.	Mass left, lateral, *in front of* uterus, extending above left groin.	Violent abdominal pain 9 weeks ago; pain ever since preventing sleep.	Tubal pregnancy and hæmatocele.	—	Dr. Purslow.	Dec. 14th, 1894.	Women's Hospital, Birmingham.	Mr. Jordan.	Left tubal pregnancy; mole, hæmatocele; large tube distended throughout with blood and blood clot; fimbriated end very thin but unruptured; bleeding mainly confined by adherent omentum.	Left Jan. 2nd, 1895; recovery.
21	31	11 years.	1	10	14 weeks.	Mass on right side of lower abdomen and behind uterus, tender, fixed.	Abdominal pain, vomiting, and distension.	Tubal pregnancy; hæmatocele.	Some albuminuria and jaundice.	Mr. Greene.	Jan 27th, 1895.	Stratford Hospital.	Mr. Greene, Dr. Nason, and Mr. Lupton.	Right tubal pregnancy and hæmatocele; removal; tube ruptured; 3 months' fœtus well developed.	Left March 18th; recovery.
22	32	13 years.	1	12	14 weeks.	Large hard mass on left side of abdomen above left groin and in pouch of Douglas.	Abdominal pain; in bed 6 weeks; history of 3 falls (two in street).	Tubal pregnancy; hæmatocele.	—	Mr. Clarkson.	March 23rd, 1895.	Women's Hospital, Birmingham.	Mr. Jordan and Dr. Edge.	Right tubal pregnancy; ruptured, and hæmatocele removed.	Left April 16th; recovery.
23	30	10 years.	1; 1 miscarriage 5 years ago.	9	5 weeks.	Boggy mass in Douglas's pouch. Abdomen distended.	Blanching; pulse 150; symptoms of internal bleeding.	Ruptured tubal pregnancy.	—	Dr. Shillito.	July 15th, 1895.	Patient's home.	Mr. Jordan and Dr. Shillito.	Left tubal pregnancy; early rupture near uterus; large vessels; both appendages removed; right ovary cystic.	Recovery.
24	35	—	1	14	6 weeks.	Mass above pubes and behind uterus.	Abdominal pain for 1 month preventing sleep; loss for 6 weeks.	Tubal pregnancy.	—	Mr. Wood.	July 18th, 1895.	Women's Hospital, Birmingham.	Mr. Jordan.	Ruptured broad ligament; hæmatocele cleared out and drained; big hole in ligament.	Left Aug. 17th; recovery.
25	30	½ year.	0	0	4 weeks.	Boggy mass filling pouch of Douglas; abdomen distended.	Symptoms of internal bleeding; blanching; abdominal pain; pulse 120.	Ruptured tubal pregnancy.	—	Dr. Littelton.	Nov. 30th, 1895.	Patient's home.	Mr. Gamgee and Dr. Littelton.	Left tubal pregnancy; early rupture close to uterus; abdomen full of blood.	*Died Dec. 17th.*
26	35	14 years.	2; 1 miscarriage 8 years ago.	12	8 weeks.	Hard, tender mass behind and to right of uterus.	Abdominal pain, worse on sitting; temperature 100°F.	Tubal.	—	Dr. T. A. Brown.	Dec. 3rd, 1895.	Private hospital.	Dr. T. A. Brown and Mr. Jordan.	Broad ligament pregnancy and hæmatocele; vaginal incision as well as abdominal section.	Left Dec. 26th; recovery.
27	42	18 years.	6	7	3 months.	Mass to right of and behind uterus.	Great pain in lower abdomen and pelvis for 6 weeks.	Tubal pregnancy.	—	Dr. Welsh.	Dec. 31st, 1895.	Women's Hospital, Birmingham.	Mr. Jordan.	Right tubal mole and hæmatocele; tube unruptured; typical specimen with rosette of fimbriæ at bottom of hæmatocele.	Left Jan. 20th, 1896; recovery.

28	28	7 years.	2	4½	8 weeks.	Mass behind and to right of uterus.	Abdominal pain getting worse for 1 month; unable to do anything.	Tubal pregnancy.	—	Dr. A. Clark.	Feb. 1st, 1896.	Do.	Mr. Jordan and Dr. Martin.	Ruptured broad ligament hæmatocele; free blood in abdomen; big hole in ligament to right of uterus; cleaned out and drained.	Left Feb. 14th; recovery.
29	40	19 years.	6; 3 miscarriages, last 6 years ago.	8	Irregular.	Cystic mass behind and to right of uterus; hard lump below this.	Pain in abdomen, worse on walking or defecation.	Right ovarian cystoma.	—	Mr. Addenbrooke.	Feb. 28th, 1896.	Do.	Mr. Jordan and Mr. Savage.	Cyst of right ovary with ruptured pregnancy of right tube; rupture size of a sixpence quite at uterine end.	Left March 24th; recovery.
30	39	15 years.	7	1½	(?)	Large mass behind uterus, not adherent.	Irregular loss for 7 weeks; 5 or 6 attacks of abdominal pain.	Tubal pregnancy and hæmatocele.	Patient suckling up to time of admission.	Mr. J. D. Price	April 22nd, 1896.	Do.	Mr. Jordan and Mr. Price.	Ruptured right tubal pregnancy; hæmatocele with peripheral adhesions; removal.	Left May 8th; recovery.
31	23	3½ years	2	1	10 weeks.	Cystic mass to left of uterus with hard lump at highest part.	Amenorrhœa 5 weeks followed by irregular loss; pain in left side of abdomen and rectum.	Left ovarian cystoma or tubal pregnancy.	—	Mr. Trout.	May 8th, 1896.	Do.	Mr. Jordan.	Cyst of left ovary with tubal pregnancy perched on top; tube unruptured.	Left May 23rd; recovery.
32	27	7 years.	3	1½	4 months.	Hard mass on left side of lower abdomen, one with uterus.	Continuous loss for 4 months; severe abdominal pain for some weeks; acute pain 4 days.	Tubal pregnancy.	—	J. W. T.	Sept. 10th, 1896.	Do.	Mr. Jordan and Dr. Edge.	Early interstitial pregnancy; left cornu of uterus and tube dilated into large blood-sac; ligatured off from the uterus in four sections.	Left Sept. 28th; recovery.
33	27	9 years.	4	4	12 months.	Child felt in abdomen; uterus empty.	Losing for 7 weeks; passage of decidua 5 weeks ago.	Abdominal pregnancy.	—	Mr. Clarkson	Dec. 11th, 1896.	Do.	Mr. Jordan and Dr. Martin.	Child and placenta removed.	Left Jan. 26th, 1897; recovery.
34	36	—	—	—	10 weeks.	Mass in lower abdomen and behind uterus, very tender; distention.	Symptoms of internal bleeding; vomiting, faintness.	Ruptured tubal pregnancy; hæmatocele.	—	Dr. T. A. Brown.	Jan. 22nd, 1897.	Patient's home.	Mr. Jordan and Dr. T. A. Brown.	Left tubal pregnancy; very large mole at extreme outer end of tube; tube probably unruptured; free hæmorrhage into abdomen.	Recovery.
35	37	8 years; 1 year.	1; 2 miscarriages, last 5 months ago.	7	7 weeks.	Left lateral tumour pushing uterus to right; tender, fixed.	Abdominal pain; temperature from 99° to 100° F.; amenorrhœa 5 weeks, followed by irregular loss.	Tubal pregnancy with hæmatocele.	Married twice; 2nd time one year only.	Mr. Tighe.	Feb. 13th, 1897.	Private hospital.	Mr. Jordan and Mr. Tighe.	Left tubal pregnancy with encapsulated hæmatocele; rupture of tube; pregnancy near uterine end.	Left March 7th; recovery.
36	27	9 years.	2	6	10 weeks.	Ill-defined tumour felt above right groin, pushing uterus to left.	Losing for 4 weeks; symptoms as of ordinary miscarriage at first; cervix dilated by medical attendant; severe abdominal pain afterwards.	Right tubal pregnancy.	No history of decidua.	Mr. Clarkson.	Oct. 25th, 1897.	Women's Hospital, Birmingham.	Mr. Jordan.	Tube ruptured; placenta protruding.	Left Nov. 15th; recovery.
37	37	17 years.	6		(?)	Tumour attached to left side of uterus at fundus.	Losing for 7 weeks; sent into hospital as case of uterine cancer.	Myoma.	Laceration and hypertrophy of cervix.	Mr. H. K. Bradbury.	Dec. 15th, 1897.	Do.	Mr. Jordan.	Vaginal section and vaginal hysterectomy; removal of pregnancy; tube unruptured; bleeding from abdominal ostium.	Left Jan. 1st, 1898; recovery.

unpleasant surprises or difficulty after opening the abdomen. The clinical diagnosis of tubo-uterine or interstitial pregnancy is an impossibility. The nearest approach to it which can be made is to recognise that in this form rupture takes place from the second to the fourth month, that this is signalised by diffuse internal bleeding as in the worst cases of early rupture, and that hitherto this has always proved fatal. There is an inter-operative diagnosis—the quick recognition of the pathological condition present—which may be assisted by the consideration already given to the affection itself and by the study of all known specimens. The recognition of the special form of distortion or asymmetry produced in the uterus by its presence is the only point of practical importance. Its bearing on quick operative action will be considered under "Treatment."

(To be concluded.)

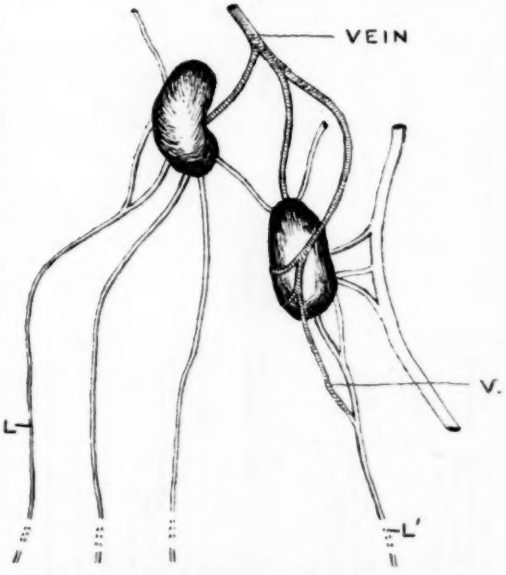
A METHOD OF INJECTING THE LYMPHATIC VESSELS.

BY CECIL H. LEAF, M.A., M.B. CANTAB., F.R.C.S. ENG.,
DEMONSTRATOR OF ANATOMY AT THE LONDON HOSPITAL.

IN this paper I wish to suggest a method by which the lymphatic vessels of the human subject may be rendered so distinct that they may be dissected out like the arteries and veins. Hitherto nearly all the experiments which have been performed with this object have been made with either mercury or various colouring matters. The great objection to the former, as Sappey long ago pointed out, consists in the fact that if a vessel is accidentally pricked the mercury leaks out and all trace of the vessel quickly disappears. The method by subcutaneous injection of colouring matters cannot be relied upon because it is most difficult to insure the point of even the finest injection syringe passing into a lymphatic vessel; this method, moreover, presupposes an exact knowledge of the course taken by these vessels; but this is just the point which the experimenter wishes to determine. Colouring matters, moreover, are unsatisfactory because they stain the surrounding tissues as well as the vessels. Formalin is the fluid which I have lately used almost exclusively. This was introduced into the London Hospital by Keith as a means of hardening and preserving the relations of the viscera in the human subject. Formalin is the commercial name of a saturated aqueous solution of 40 per cent. of formic aldehyde. For the objects for which it was introduced and for rendering the dissection of the lymphatic vessels possible it is undoubtedly of very great value. The first experiment made with this object was performed nearly two years ago on a collie dog which, on account of its poaching habits, had to be shot. An incision was made into the dorsum of the tongue, into which the rounded nozzle of a syringe was passed; the nozzle was perforated by six or seven small holes; round the nozzle the lips of the wound were secured as tightly as possible. The syringe was filled with Stephens's ordinary blue-black ink, which was then injected. To effect this, however, very considerable pressure had to be used on the piston. On dissecting the sub-maxillary region of this dog several of the lymphatic vessels were found to be well stained and appeared quite distinct as bluish-black threads; some of the sub-maxillary glands were also partially stained. In the next experiment the superficial epidermis of the balls of several of the toes was scraped off and the open mouth of a syringe filled with the ink pressed firmly against the subjacent tissues. The piston was then forced down and the ink slowly disappeared. On dissection two lymphatic vessels were easily traced up to one of the deep inguinal glands which was well stained. From this the lymphatic vessels were further traced to the lumbar glands, three of which were found to be deeply stained. From the toes also two other vessels were traced up to a gland which was found to be lying underneath the gluteus maximus. This, too, was deeply stained by the ink. In both these experiments, therefore, it was found that by using great pressure the lymphatic vessels could be rendered quite distinct. After some time, however, it was noticed that the ink stained the surrounding tissues as well as the vessels. It had apparently percolated through the latter into the former.

Experiments similar to those made on the dog were made on the human subject, but they ended in a complete failure. This was probably due to the fact that the subjects operated on were not perfectly fresh. The idea was nevertheless entertained that it would be quite possible to inject the lymphatic vessels in a cadaver, even if not absolutely fresh, by passing through the vascular system an excessive quantity of formalin under a very high pressure; therefore into both the internal jugular vein and common carotid artery of a subject aged forty-five years 11 gallons of the formalin solution (one part of formalin to seven parts of water) and about 2 pints of spirit were injected from March 24th to April 24th, the object being to use so much pressure that some of the excessive amount of fluid would be bound to find its way into the lymphatic vessels. The right inguinal region of this subject was dissected on April 25th. The glands here were found to be large and very hard and on pulling them from their bed the vessels passing to and from them could be distinctly seen as somewhat semi-transparent whitish cords. Fig. 1 represents some of the superficial

FIG. 1.



Dissection showing two of the superficial inguinal glands with their lymphatic vessels and veins.

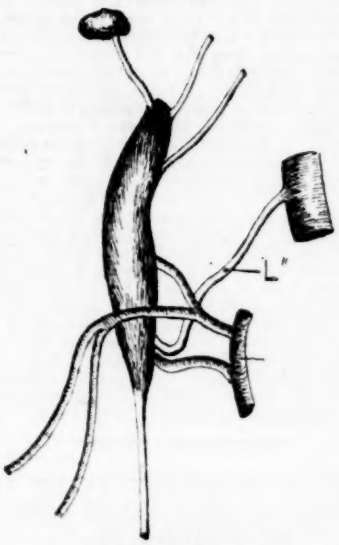
inguinal glands and their vessels as seen in dissection. A vessel (L) passing to one of the vertical set of superficial inguinal glands is there shown. This was traced down the thigh for 9 in. Had it been possible to thoroughly dissect out all the other vessels, some of which were larger than this one, they could undoubtedly have been traced very much further down the limb. All the vessels shown in the diagram passing to the superficial inguinal glands were traced down for at least 6 in. The only other parts of this subject which I have yet had an opportunity of dissecting are: (1) the mesentery; and (2) a small portion of the pelvic region. In the former the vessels could fairly easily be traced from the intestinal wall to the nearest set of lymphatic glands. In the latter lymphatic vessels could be seen passing from a gland which lies transversely over the termination of the external iliac artery to end in a group of glands situated close to the bifurcation of the common iliac artery. By this method of injection the lymphatic vessels are probably rendered distinct by two processes. In the first some of the formalin solution undoubtedly passes straight into the lymphatic vessels, the greater part, however, does not, for had it done so these vessels would be found fully distended and the beaded appearance due to the presence of valves quite distinct; this, however, except in the thoracic duct, was not noticeable. In the second process what takes

place is probably as follows. The greater part of the formalin solution escapes into the surrounding subcutaneous tissues. This is proved by finding these tissues bathed in the fluid; this fluid by hardening and drying up the fat in which the vessels are embedded and by hardening the vessels themselves from the outside thus renders them distinct.

Fig. 1 brings out an important fact, and that is, that a communication exists in the inguinal region—at any rate, between some of the lymphatic trunks and the smaller veins. In this dissection the vessel L′ was traced down the thigh for six inches. It had no naked-eye resemblance to a vein; its walls, like the other lymphatic vessels, were white. This vessel terminated by three branches, two of which passed straight into the gland while the other terminated in a small vein which on dissection was found to be a tributary passing into the circumflex iliac vein. Sections were taken of the vein at V and of the vessel L′. In the former the walls were found to be very thick, the various coats distinct and sharply marked off from each other. The vessel on transverse section was quite round while blood was seen in the interior. The thickness of the walls giving the vessel the appearance of an artery was undoubtedly caused by the excessive amount of formalin used for the injection. On examining the vessel L′ under the microscope it was found that the walls were much thinner, that the lumen was oblong (not round), and that the various coats were not nearly so distinct or so well marked off from each other as they were in the vein.

Fig. 2 represents a preparation taken from another subject which had been injected with the usual amount of formalin solution (four pints). For preserving this gland with the lymphatic vessels I am much indebted to Mr. E. J. Wylen of the London Hospital. In this case some of the lymphatic vessels were found unusually distinct. In the diagram the two veins which came from the lymphatic gland were traced to one of the tributaries of the deep external pudic vein. Besides this there was a vessel (L″) also coming from the gland which was found to end in the long saphenous vein. This vessel presented the same naked-eye appearance as the vessel L′ of Fig. 1. It exactly resembled a small thoracic duct. Though the lumen was larger than that of either of the veins, yet the thickness of its walls was only about a third. Several microscopical sections were made. They showed that the various coats were neither so thick nor so sharply defined as was the case in the veins.

FIG. 2.



Dissection of an inguinal gland showing a lymphatic vessel terminating in a vein.

The two vessels L′ (in Fig. 1) and L″ (in Fig. 2) are undoubtedly lymphatic vessels. Fig. 1 shows an afferent lymphatic vessel partly terminating in a lymphatic gland and partly terminating in a vein. Fig. 2 shows an efferent lymphatic vessel emptying straight into the long saphenous vein. It is well known that a microscopical distinction is not always possible between a vein and a lymphatic. Hence it might reasonably be inferred that both the vessels shown in this figure were not lymphatics, but veins. In subjects, however, which have been hardened in formalin, especially if this has been injected in large quantities through the veins, a distinction between any but the smallest veins and lymphatics may be made by noticing the following points of difference:—

Naked-eye Appearance.

Veins.	*Lymphatic Vessels.*
1. Veins look blue.	1. Lymphatic vessels look white.
2. On section the walls remain apart; hence	2. The walls collapse quickly on section; hence
3. The lumen is round.	3. The lumen becomes obliterated unless a pin is inserted to keep the walls apart.
4. The walls are thick.	4. The walls are much thinner.

Under the Microscope.

1. Veins usually contain blood.	1. Lymphatic vessels usually do not contain blood.
2. The lumen is round.	2. The lumen is oblong
3. The various coats are well marked.	3. The coats are not so thick or so sharply marked off from each other.

In both figures these distinctions were well marked. For lymphatic vessels which communicate in this way with the veins the term "lymphatic vein" might be used. Whether such communications will be found in other parts of the body subsequent dissections will show. In that part of the mesentery which was dissected there was no trace of it and even in the inguinal region it was not observed to be at all frequent. Sappey long ago came to the conclusion that there was a direct communication between the finest lymphatic capillaries and the vascular system, but that a communication takes place between the larger lymphatic trunks and the veins other than at the termination of the right lymphatic and thoracic duct respectively has not, I believe, yet been observed. If such a communication is shown to be general throughout the body it may help to explain a good many otherwise obscure clinical phenomena.

In conclusion, then, it is (1) quite possible to render the lymphatic vessels sufficiently plain for dissection purposes by the injection of a large quantity of formalin solution; (2) the fresher the subject the greater the probability of success; (3) as much pressure as possible (short of rupturing the heart or any large vessel) must be used; and (4) in the inguinal region, at any rate, and possibly in other parts of the body, a communication exists between the veins and lymphatic vessels.

Wimpole-street, W.

THE PRODUCTION OF CHLOROFORM ANÆSTHESIA.

BY EDWARD LAWRIE, M.B. EDIN.,
SURGEON-LIEUTENANT-COLONEL, I.M.S.; RESIDENCY SURGEON, HYDERABAD, DECCAN.

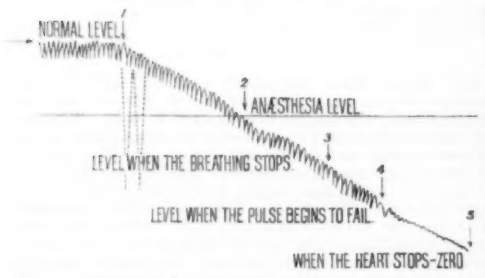
THE following are the notes of chloroform administration at the Afzulgunj Hospital during April, 1898. The chloroformist for the month was Olivia Correa, a third-year student at the Hyderabad Medical School:—

1. Total number of cases chloroformed during the month, 221.
2. Cases of partial anæsthesia only for brief minor operations, 88.
3. Average age of patients chloroformed, 24 years.
4. Children below the age of five chloroformed, 48.
5. Average time to produce anæsthesia, 3 min. 2 sec.
6. Average time to produce anæsthesia in children under five, 1 min. 15 sec.
7. Average time to produce anæsthesia in adults, 3 min. 36 sec.
8. Morphine administered beforehand in cases, 3.
9. Average quantity of chloroform required to produce full anæsthesia, 2·95 drachms.
10. Rate in minims of chloroform applied to the cap per second, 0·96 minim per second.

11. Average total amount of chloroform employed per case, 3 4 drachms.
12. Average duration of operations, 12 min. 13 sec.
13. Cases in which struggling occurred, 50.
14. After effects, vomited, 3.

The chloroformist at the Hyderabad hospitals is as a rule a fourth-year student, but this session we have been obliged to entrust the anæsthesia to third-year students as all our senior students are out on plague duty in the districts. The plan of chloroformisation we employ is that of Syme. Syme's method of giving chloroform consists in keeping the patient's breathing regular under all circumstances; in entirely disregarding the heart and circulation as factors in the administration; in never pushing the inhalation beyond the point where anæsthesia is complete; and in maintaining the narcosis as long as the operation lasts at the "anæsthesia level" (*vide* diagram). The following diagram of the blood-pressure under chloroform shows (1) precisely how Syme's method works in practice; and (2) the effects of abnormal anæsthesia and of overdosing.

DIAGRAM OF THE BLOOD PRESSURE UNDER CHLOROFORM.



EXPLANATION OF THE DIAGRAM OF THE BLOOD-PRESSURE UNDER CHLOROFORM: THE DIAGRAM READS FROM LEFT TO RIGHT.

Part I.—Normal Anæsthesia.

1. The first part of the tracing as far as arrow 1 indicates the normal level of the blood-pressure before the inhalation of chloroform is begun.
2. At arrow 1 the inhalation of chloroform is commenced.
3. Provided there is continuous regular breathing the blood-pressure falls gradually until anæsthesia is complete at 2. The fall of blood-pressure up to this point is due to vaso-motor dilatation and is perfectly harmless.
4. When the point indicated by arrow 2 is reached and anæsthesia is complete, which is known clinically by the cornea becoming insensitive or the breathing stertorous, the inhalation is stopped and only sufficient chloroform is given afterwards to maintain the blood-pressure as nearly as possible at the "anæsthesia level."

Part II.—Abnormal Anæsthesia and Overdosing.

5. The dotted lines in the diagram show what happens when chloroform is given with too little air or in such a manner that the patient's breathing is interfered with. The blood pressure falls irregularly and with sudden deep drops which used to be thought by the Glasgow Committee to be caused by sudden heart failure. Dr. Bomford discovered that these sudden falls are due to nervous agency through the vagus which, when overdosing is threatened, temporarily stops or slows the heart as a safeguard against the over rapid conveyance of the anæsthetic to the brain. Whether they are safeguards or not these irregular falls ought never to be brought about, as they carry the blood-pressure below the "anæsthesia level" and are abnormal. The danger of irregular respiration is that it may lead to the inhalation, or gasping in, of irregular quantities of chloroform and render overdosing imminent.
6. If chloroform is pushed beyond the point where anæsthesia is complete the respiration becomes impeded and the heart begins to fail. At arrow 3 the breathing ceases; the pulse fails at 4; recovery is then almost impossible, and the heart stops at 5.

(The more the air is excluded when chloroform is pushed the more rapid and irregular will be the failure of the heart and circulation. Undoubtedly the pulse will show signs of this, but it can never convey more than second-hand information that the breathing has been interfered with or that the patient has been overdosed, for both of which, clinically or experimentally, the chloroformist is alone responsible.)

Proceeding on Syme's plan the administration of chloroform is never pushed below the "anæsthesia level." It is obvious that the region of danger is not entered or even seriously approached, and that unless Syme's rules are accidentally disregarded no risk whatever from chloroform anæsthesia can ever arise. On the other hand, those who believe that chloroform has a direct action upon the heart must be guided *more or less* by the pulse, which is to them an index of unavoidable danger and necessarily one to be anxiously watched. But the experiments of the Hyderabad Commission and my cross-circulation experiments[1] have long ago proved that chloroform has no direct action on the heart. Accordingly, the moment the circulation is made a principal factor in the inhalation and is watched for effects which can only be produced indirectly through the respiration an appreciable element of peril is introduced which makes the method of administration itself *more or less* homicidal. This must be clearly understood. It is not only that "watching the pulse" distracts some of the chloroformist's attention from the all-important breathing, but it is manifestly useless to watch it at all except as a danger signal and as a danger signal it can only be brought into action by conditions for which the chloroformist is himself responsible, such as abnormal administration with too little air, or overdosing. The measure of heart failure under chloroform is demonstrably the exact measure of the amount of the chloroformist's attention which is withdrawn from the breathing and bestowed upon the pulse; and the diagram proves that if the pulse were to be taken as the sole guide to dosage the administration of chloroform would not only never be free from risk, but would of necessity be uniformly fatal. What is shown so definitely and admirably in the diagram is fully borne out in clinical practice. In Hyderabad chloroform is given by students in strict accordance with Syme's principles, the heart is ignored, and we have no deaths. In England the teaching of anæsthetics is in the hands of professional anæsthetists who "funk" the heart and deaths from chloroform take place, according to Leonard Hill, by the dozen and, according to Roger Williams, no less than once in every 1236 inhalations. The deaths under anæsthetics in England represent an appalling picture of the incapacity of the medical profession as regards the administration of these drugs. This incapacity is altogether due to the absolute want of training of English students in the art of chloroform administration on Syme's principles, which have been established on a scientific basis by the Hyderabad Commission. We at Hyderabad have always said that if students in India can be taught to give chloroform with guaranteed safety, *a fortiori* the splendid men who study in the London medical schools with all their superior advantages can be taught to do the same.

Hyderabad.

A CASE OF RECOVERY AFTER THE INGESTION OF A LARGE DOSE OF STRYCHNINE.

BY CHARLES D. GREEN, M.D. LOND., F.R.C.S. ENG.

SHORTLY before 8 A.M. on Jan. 1st, 1895, I was called to see a man fifty years of age. On my asking him what was the matter he merely replied "poverty" and as some twitching of the hands with a backward jerk of the neck immediately occurred I asked him what he had taken and he said "Battle." I was obliged to return home to get what was necessary, nothing having been said by the messenger who had been sent for me to intimate the probability of poisoning. This occupied about twenty minutes and on my return there were well-marked rigidity of the limbs and retraction of the head and the patient was evidently in considerable distress. He, however, submitted to treatment and apomorphia was at once injected and 20 gr. of zinc sulphate were given by the mouth, followed by 2 dr. of tannic acid in ½ pint of hot water. In about ten minutes he vomited a little. An attempt to pass an œsophagus

[1] Vide THE LANCET, Feb. 11th and July 1st, 1893.

tube provoked such violent spasms that it had to be abandoned. It so happened that Mr. C. A. Ballance and Dr. H. Low had arranged to be at my house that morning at 9 o'clock for the purposes of an operation and on learning the difficulty in which I was placed they both very kindly came to my assistance and Dr. Low soon got the patient fully under the influence of chloroform; severe tetanic spasms occurred during the process, opisthotonos being well marked when the administration was commenced. The œsophagus tube was then passed and the stomach was washed with warm water until no more Prussian blue came away; this process occupied nearly an hour and several gallons of water were required. The stomach was next washed with a quart of warm water into which the juice of a lemon had been squeezed, then with a solution of tannic acid, and finally with plain water. 30 grs. of chloral hydrate dissolved in a little water were then introduced into the stomach and the tube was withdrawn; 0·01 gr. of atropine sulphate was injected subcutaneously. The patient was then left in charge of my colleague Mr. Francis Murphy, who administered a little chloroform at intervals during the next five hours as the tetanic spasms became severe. By 9.30 P.M. the patient was evidently recovering, no severe spasms having occurred for three or four hours though there were twitchings at intervals with general rigidity and retraction of the head. He was slightly delirious. As he became able to swallow, a mixture of ammonium bromide and tincture of belladonna was given. The rigidity of the limbs and the retraction of the head persisted during the next two days, gradually diminishing, and on the morning of Jan. 4th they were no longer noticeable. The patient complained of considerable soreness of the limbs and had some weakness of the right leg, which, however, did not persist, and at the end of a fortnight he was practically well.

It transpired that the patient had taken the entire contents of a sixpenny packet of Battle's vermin-killer, stirred up in a little water, on an empty stomach about two hours before I saw him. The purchase was verified by inspection of the poison sales book at the druggist's shop where it had been made and a similar packet was obtained from the same consignment. An analysis made by Messrs. Corbyn, Stacey, and Co. showed that this packet contained 3·437 grains of strychnine.

I think the above may be taken as fairly representing the dose taken, as, although different samples of Battle's vermin-killer have been found to vary, the difference in composition between two packets in the same consignment is not likely to be great. In any case, the dose taken was large, for a small sample taken from the stomach washings yielded abundant evidence of the presence of strychnine. The recovery after the ingestion of so large a dose, especially as the symptoms of absorption were already pronounced before treatment was commenced, seems to be remarkable. The case appeared almost hopeless. The successful result is entirely due to the valuable help and guidance which happened to be at hand.

Upper Edmonton.

LATENT TUBERCULOSIS OF THE TONSIL.[1]

BY HUGH WALSHAM, M.A., M.D. CANTAB., M.R.C.P. LOND.,

ASSISTANT PHYSICIAN, FORMERLY PATHOLOGIST, TO THE CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST; CLINICAL ASSISTANT TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET.

MY attention was first directed to this subject by an address of Dr. G. Sims Woodhead entitled "The Channels of Infection in Tuberculosis." In this very thoughtful and suggestive paper Dr. Woodhead, after reviewing the various ways in which the tubercle bacillus might conceivably gain entrance into the living organism, sums up as follows: "I am driven to the conclusion that this method of infection of the glands of the neck through the tonsils must be of a comparatively frequent occurrence, especially in children living under insanitary conditions and subjected to various devitalising influences."

On a subject so important I determined to make use of my opportunity as pathologist to the City of London Hospital for Diseases of the Chest to investigate, as far as possible, if this mode of infection of the glands of the neck through the tonsils really took place. I proposed to make a careful histological examination of the tonsils and follicular glands at the base of the tongue of every case of tuberculosis which came before me for post-mortem examination, in the hope that such examination might possibly throw some light on this subject. My investigations, however, were soon directed into a wider channel by a communication of M. Dieulafoy[2] to the Academy of Medicine of Paris, entitled "Latent Tuberculosis of the Three Tonsils." M. Dieulafoy made an experimental investigation to ascertain whether hypertrophy of the tonsils and adenoid vegetations of the pharynx are in any cases of tuberculous nature and, if so, in what proportion. He obtained a number of portions of tonsils and adenoid vegetations which had been removed on account of overgrowth. Hypertrophied tonsils from 21 cases were inoculated into guinea-pigs and 8 of the animals became tuberculous. Adenoid vegetations from 35 cases were inoculated and 7 of the guinea-pigs became tuberculous; thus 1 in 8 of the cases of apparently simple hypertrophy of the tonsils and 1 in 5 of the cases of adenoid vegetations were in reality tuberculous. M. Dieulafoy's communication met with much adverse criticism at the hands of his colleagues in the Academy as he had made no histological examination of the portions of tonsils so injected. It was pointed out that inoculation experiments were open to this objection; that virulent tubercle bacilli might be entangled in the mucus of the tonsillar crypts without these organs being necessarily tuberculous. So in addition to the histological examination of the tonsils removed from the dead subject I set myself the task of examining histologically portions of tonsils removed from the living patient, and here I wish to thank Mr. Bowlby, assistant surgeon to St. Bartholomew's Hospital, for his kind permission for me to examine portions of tonsils and adenoid vegetations removed by him in the throat department of the hospital.

At the outset of an investigation such as this I naturally turned first of all to the classical works of pathology in this country, and here I must admit I met with nothing but disappointment; in fact, the tonsils seem almost to have escaped the scrutiny of English pathologists. Dr. Wilks and Dr. Moxon in their well-known work write as follows: "Occasionally tubercles may be found isolated on the palate, tonsils, and other parts of the mouth, commencing as white spots and then softening until ulcers are formed." Dr. Coats in his "Text-book of Pathology" says tuberculosis of the tonsils occurs chiefly in connexion with that of the epiglottis and tongue. Dr. Osler in his "Text-book of Medicine" says tuberculosis of the tonsils has been recorded in a few cases. Professor Hamilton is the only British pathologist who makes any mention of a possible connexion between tuberculosis of the tonsils and cervical gland enlargement. He says: "It has even been alleged that tuberculous enlargement of the glands of the neck may be caused by absorption of the tubercle bacillus through the tonsils and analogous structures in the neighbourhood." By analogous structures in the neighbourhood I take Professor Hamilton to mean the follicular glands at the base of the tongue and generally the whole adenoid ring surrounding the entrance to the respiratory and digestive tracts. From the text-books of pathology I turned to the post-mortem records of the City of London Hospital for Diseases of the Chest. On carefully going through the post-mortem books from 1854 to the present time I find no mention of the tonsils being affected with tubercle, and yet, as my investigations will show, how often must these organs have been tuberculous. Dr. J. Purves Stewart[3] has published a short paper on the occurrence of giant cells in the tonsils. The case described by Dr. Stewart appeared to be merely one of ordinary chronic enlargement of the tonsils with pharyngeal adenoids associated with post-scarlatinal otorrhœa and enlargement of the cervical glands in a child aged ten years. The tonsils were removed. On a naked-eye examination they differed in no way in their appearance from ordinary chronically

[1] Thesis for the degree of Doctor of Medicine in the University of Cambridge.

[2] Bulletin de l'Académie de Médecine, Série 3, tome xxxiii, 1895.

[3] Brit. Med. Jour., May 4th, 1895.

enlarged tonsil. On microscopical examination, however, the following appearances were found. Scattered through the substance of the lymphoid tissue were large numbers of tuberculous giant-cell systems, apparently most numerous close beneath the epithelial surface of the tonsil. The giant cells were of the typical multinuclear form characteristic of tubercle surrounded by the usual epitheloid and lymphoid cells. Staining with Nielsen and Gram's method failed to demonstrate bacilli in the sections. The pharyngeal adenoids on section were found free from tubercles. Some enlarged cervical glands were subsequently removed from the same patient and these, on microscopical examination, showed definite tuberculosis in various stages of advance, from simple enlargement to caseation.

My subject naturally falls into two principal divisions. Firstly, I shall give the results of my examination of the tonsils, cervical glands, and follicular glands of the tongue in certain cases of tuberculosis which came before me for post-mortem examination and, secondly, I shall give the results of my examination of portions of hypertrophied tonsils and adenoid vegetations removed from the living patient.

Post-mortem cases.—In all the cases I am about to describe, with two exceptions, there was nothing during the life of the patient to call attention to the tonsils. In the majority of the patients the tonsils were atrophied; in only one or two was there anything approaching hypertrophy. There was no complaint of pain or difficulty in swallowing; the cervical glands were not enlarged; in short, there was nothing to call attention to the organ. This being so, I have ventured, following M. Dieulafoy to call this variety of tonsillar tuberculosis "latent." Out of 34 consecutive post-mortem cases I found the tonsils to be more or less tuberculous in 20. I will now give short notes of the cases.

CASE 1.—Post-mortem examination held on Sept. 19th, 1895. A male, aged fifty-two years, had suffered from morbus cordis—aortic and mitral. There was miliary tuberculosis of the lungs and also tuberculous ulceration of the base of the tongue, pharynx, and larynx. Both lungs were stuffed with grey miliary tubercle from the apex to the base. The cervical glands were enlarged and tuberculous. There was extensive ulceration of the ileum. The left tonsil was completely free from any trace of tubercle; the right tonsil was unfortunately lost; expectoration was *nil*.

CASE 2.—Post-mortem examination held on Oct. 10th, 1895. A male, aged thirty-eight years, had suffered from acute miliary tuberculosis. There were caseous suprarenals; no pigmentation was present. Both lungs were stuffed with miliary tubercle from the apex to the base. The larynx and trachea were normal. The cervical glands *nil*. There was tubercle in the kidney and the liver. There was a small deposit of tubercle in one tonsil; the giant cells were ill marked; expectoration was very slight.

CASE 3.—Post-mortem examination held on Oct. 24th, 1895. A female, aged thirteen years, had been affected with chronic pulmonary tuberculosis. The larynx, trachea, and bronchi were normal. The bronchial, cervical, and anterior mediastinal glands were tuberculous. There were numerous old cavities in both lungs. There was a small tuberculous ulcer on the dorsum of the tongue. Caseous tubercle was scattered through the lower ileum. There were half-a-dozen small tuberculous ulcers in the ascending colon. The tonsils were normal in size; the crypts were very wide; the epithelial lining to the crypts was normal; there was epithelial tubercle in both; the giant cells were not marked; expectoration was slight.

CASE 4.—Post-mortem examination held on Oct. 29th, 1895. A male, aged forty-four years, had suffered from pulmonary tuberculosis. There were tuberculous peritonitis and tuberculous ulceration of the pharynx and soft palate. There was much superficial ulceration of the epiglottis. There was a small tuberculous ulcer about 1 in. from the tip of the tongue. Ulceration of the larynx was present. The bronchial and cervical glands were tuberculous. There was a small recent cavity of about the size of a cob-nut at the apex of the right upper lobe of the lung; miliary and caseous tubercle were scattered through the middle and lower lobes; the left lung showed no cavitation; there was fresh grey tubercle scattered through the upper lobe. Both tonsils were almost completely destroyed by tuberculous ulceration; in fact, there was hardly any of the proper adenoid tissue of the organ left; the follicular glands at the base of the tongue were tuberculous; expectoration was slight.

CASE 5.—Post-mortem examination on a male, aged thirty years, who had suffered from acute miliary tuberculosis. The old cavity was surrounded by dense fibrous tissue at the apex of the right upper lobe. The rest of the right lung, as also the left lung, was simply stuffed with grey miliary tubercle. As to the larynx, the right vocal cord was almost completely destroyed by ulceration and the under surface of the epiglottis was extensively ulcerated. The spleen, kidneys, and intestine contained many miliary tubercles. The tonsils were hypertrophied; tubercle was scattered through both.

I think the results of my post-mortem examinations are sufficient to disprove, what is generally held to be true, that the tonsils are very rarely affected by tubercle, for in 20 out of 34 cases examined these glands were found to be tuberculous. Now what is the significance of these miliary tubercles in the tonsils? Is the tonsil primarily affected? Are we to suppose that the tuberculous virus may first gain entrance to the human organism by the way of the tonsil, spreading thence to the cervical and mediastinal glands and so to the thoracic duct, right side of heart, and lung? Or are we to look upon this tonsillar tuberculosis as altogether secondary and, in short, auto-infection from the sputum passing over them? I think both suppositions are true. In support of the first I will take the results of the post-mortem examinations of Cases 1 and 4. In the former case the primary cause of death was the aortic and mitral insufficiency. The tuberculosis was altogether secondary. The tuberculous ulcer at the back of the pharynx was very chronic in its course; in fact, there were appearances of healing at some parts. Microscopically also the sections show the fibroid character of the tubercle. The infection starting thence from the pharynx gradually spread to the cervical glands, which are found post mortem to be tuberculous. From here we may conceive that the bacilli may reach the thoracic duct and the right side of the heart, the pulmonary artery and the lungs. Now what do we find? Exactly what one would expect, a general shower of miliary tubercle all over both lungs. My post-mortem note on the lungs is as follows: "Both lungs are stuffed from the apex to the base with grey miliary tubercle." This case is, I think, clear and conclusive. The old tuberculous ulceration in the fauces and the fresh grey miliary tubercle in the cervical glands and lungs lead one irresistibly to the conclusion that the primary source of infection was in the pharynx. There could be no question here of the pharynx being infected by the passage over it of sputa laden with bacilli, for, as usually happens in these cases of miliary tuberculosis of the lungs, there was no sputum. In the latter case (Case 4) we find tuberculous ulceration of the tonsils and soft palate. The follicular glands at the base of the tongue are tuberculous although no ulceration is present. Cervical and bronchial glands contain tubercle. The condition of the lungs is much the same as in the former case. We find grey miliary tubercle scattered through both lobes of the left lung, a small recent cavity of about the size of a small cob-nut at the apex of the right upper lobe and the middle and lower lobes containing miliary tubercle, some beginning to caseate. Here also I think the evidence that the tonsil was the primary source of infection is conclusive. The faucial ulceration was much older than the tubercle in the lung. True, we have a small recent cavity at the right apex and the tubercle in the right upper lobe had begun to caseate, but I do not think this is evidence against the tonsillar origin of the infection. These are the only two cases in my series in which the tonsil could be regarded as the primary source of infection.

The next of my cases are two of acute miliary tuberculosis (Cases 2 and 5). Both of these cases contained miliary tubercle in the tonsils. In Case 2 both lungs were stuffed with miliary tubercle throughout. The only caseous focus was in the suprarenal capsules. Here at first I was at a complete loss to account for the tonsillar tuberculosis. On reflection I think it can only be explained by supposing the infection to have been conveyed to the tonsil, as it is to the other organs, by the blood-stream; that is, that the tonsil does not receive the infection from the outside but from the blood-current. In this case the tubercles were very sparsely scattered in the organ. Case 5 is a little different. Here the primary source of infection was no doubt the apparently old so-called quiescent cavity at the apex of the right upper lobe. The history appeared to be this: for some unexplained reason this old cavity gave rise to the general dissemination of grey tubercle to tonsils, spleen,

kidneys, and intestines, the tonsils being infected as the other viscera through the blood-stream.

The remaining cases appeared to be instances of auto-infection from the passage of bacilli-laden sputum passing over the tonsils. The adenoid tissue of these organs becomes affected in the same way as the adenoid tissue of the Peyer's patches in the intestine and the lymphoid accumulations in the larynx and tongue.

Tubercle, as it occurs in the tonsil, is generally miliary in character. In some cases the tubercles were very rich in giant cells resembling those found in lymphatic glands; in other cases these cells were absent (epithelioid tubercle). The tubercles vary extremely in number; they may be thickly scattered all through the substance of the tonsil, or one or two may be all that are found after diligent search through many microscopical sections. Bacilli are generally scanty in number, but may be found if diligently searched for.

How do the bacilli gain entrance to the substance of the tonsil? Can they penetrate the normal intact epithelium lining the tonsillar crypts? In some of my cases the epithelial lining was in parts desquamated. But this does not appear to be necessary for the penetration of the bacillus. If the tonsillar crypts be carefully examined, search being made over hundreds of sections, places will be found where there are conical lymphoid accumulations. These lymphoid accumulations completely obscure the epithelium lining the crypts at these points, but the epithelial cells on careful observation are found to be intact. There is no doubt that the lymphoid corpuscles wander from the deeper adenoid tissue of the tonsil to the surface. The bacilli perhaps enter the adenoid tissue of the tonsil at these spots. Here, being destroyed by the phagocytes, their life-history may abruptly come to an end. But if too numerous victory may be theirs and the partially destroyed phagocyte may actually form the nourishing material on which they may live.

What is the connexion between the so-called strumous cervical glands and the tonsils? Are the tonsils the primary place of infection in these cases? Is it possible for the tubercle bacillus to be absorbed through the tonsils and so reach the lymphatic glands of the neck without leaving a trace behind them in the tonsil? I think from my investigations above we are justified in answering the first question in the affirmative and the second in the negative. I think my investigations show that the tonsil is an organ very easily infected with tubercle. It was found to be so 20 times out of 31 cases of acute and chronic tuberculosis.

I come now to the second division of my thesis. I have to state the result of my examination of the tonsils and adenoid vegetations removed from the living patients. Here my investigations have been entirely negative. I have examined microscopically many portions of hypertrophied tonsils and adenoid vegetations without finding any trace of tubercle; other observers, however, have been more fortunate. In addition to the observation of Dr. Purves Stewart referred to above, M. A. Pilliet in 1892 contributed a short note to the Socié é Anatomique of Paris upon the presence of giant cells in adenoid vegetations of the pharynx, and a very interesting paper was communicated by Dr. M. Lennoyez in 1894 to the Société Médicale des Hôpitaux entitled Tuberculous Adenoid Vegetations of the Naso-Pharynx. The following case appears to me to be so important that I quote it at length. It is from Dr. M. Lennoyez's paper.

A woman, aged thirty-eight years, married, suffered from chronic nasal obstruction since childhood but was otherwise in good health. She came to the hospital complaining of a purulent discharge from the left ear with deafness; apart from this there was nothing pathological. The husband was healthy and there were three healthy children. She presented a characteristic adenoid facies. Adenoid vegetations were diagnosed and removed. One month after the operation her general condition was found to be very unsatisfactory. She had a cough and there were night sweats, loss of appetite, and wasting. On examination there was dulness with prolonged expiration under the right clavicle, and six months later the diagnosis of pulmonary tuberculosis was confirmed. No chest disease was discoverable at the time of the operation.

Now in this case three suppositions are possible—(1) the patient may have been infected at the time of the operation, or (2) there was latent tuberculous disease of the right lung at the time of the operation which developed after, or (3) the adenoids were tuberculous from the first, the operation letting the bacilli into the general circulation. Unfortunately no histological examination of the removed adenoids seems to have been made. The first hypothesis in these latter days of aseptic surgery is not, I think, likely. The second is possible but not probable. The third is most likely. Dr. M. Lennoyez gives a second similar case in a child aged six years. Adenoids were removed. Microscopical examination revealed the presence of giant cells and tubercle bacilli. A third case came under my notice in March, 1896, in a young woman aged seventeen years. There was no family history of tubercle. Adenoid vegetations were removed a year ago. The chest was carefully examined at that time and no physical sign of disease was discovered. The patient's mother was living and was healthy. Her father had died from morbus cordis; she was the only child. She never quite recovered after the operation. Cough, wasting, and night-sweats were marked six months after the operation. On examination the physical signs of a cavity were found at the apex of the right upper lobe. It is possible, of course, that latent chest disease existed at the time of the operation, but there was no evidence of this. Unfortunately no microscopical or bacteriological examination was made of the adenoid vegetations removed. The following conclusions, I think, are justifiable:—(1) that the tonsils instead of being almost immune from tuberculous disease are very frequently affected; (2) that tubercle may be primary in the tonsil; (3) that the tonsils are very frequently affected secondarily in persons suffering from chronic pulmonary tuberculosis; (4) that when the tonsils are tuberculous the cervical glands receiving the lymphatics from these organs are also frequently affected with tubercle; (5) that the follicular glands at the base of the tongue are rarely found tuberculous; and (6) that the tonsils may be affected from without or through the blood stream in acute miliary tuberculosis.

The post-mortem examinations were with one exception made by myself. The tonsils on removal were at once placed in absolute alcohol to harden. When sufficiently hard they were cut with Williams's ether freezing microtome and stained in hæmatoxylin and eosin. In examination for bacilli carbol fuchsine and methylene blue were used.

[On account of the pressure on our space we have been reluctantly compelled to omit such of Dr. Walsham's illustrative cases as are not specifically referred to in the text.]

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LITERARY INTELLIGENCE.—Mr. Frank A. Rogers, of 327, Oxford-street, has published an abridged list of important alterations in the British Pharmacopœia, 1898, as compared with the British Pharmacopœia, 1885. It is in a very convenient form, being printed on a card which folds in three, and a copy will be sent to any medical man who may wish to have it.

MEDICAL MAGISTRATE.—Mr. A. E. Davies, M.R.C.S. Eng., of St. Asaph, has been appointed a Justice of the Peace for the county of Flint.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF RAPID COLLAPSE AND REDEVELOPMENT OF AN OVARIAN CYST.

BY JOHN D. MALCOLM, C.M., F.R.C.S.EDIN.,
SURGEON TO THE SAMARITAN FREE HOSPITAL.

THE subject of the following note suffered from severe attacks of pain in the abdomen at intervals from Aug. 29th, 1895, onwards. On March 1st, 1896, Dr. William Thyne of High Barnet diagnosed an ovarian tumour with occasional twisting of its pedicle. Six days later, before arrangements had been made for the removal of the tumour, the patient had a very severe attack of pain accompanied by uncontrollable vomiting and great increase in the size of the tumour. On the 8th she was removed to the Barnet Cottage Hospital and Dr. W. Thyne removed a tumour of the right ovary which was almost black from occlusion of its vessels caused by twisting of the pedicle. The left ovary appeared healthy. The uterus was enlarged, the patient being in about the sixth week of pregnancy. Convalescence was uninterrupted and a full-time healthy child was delivered by forceps on Oct. 27th, 1896. On Oct. 2nd, 1897, the patient was again seized by pain in the abdomen and she said that she felt exactly as she had done in her previous illness. Dr. W. Thyne and Dr. Andrew Elliot examined her on the 3rd and there was then no doubt that another tumour existed. The Barnet Hospital was closed at that time and the patient was sent to me for treatment at the Samaritan Free Hospital. I saw her with Dr. Elliot on the 12th and there was at that time no palpable tumour. There was a tender place in the pelvis and the seat of the tenderness could be moved about freely. Taking the history of the first tumour into consideration and relying, as I knew I could, on the observations reported to me by Dr. Thyne and Dr. Elliot, I diagnosed a ruptured ovarian tumour and arranged for the patient's admission to hospital a few weeks later. On Nov. 8th I found a pelvic tumour extending nearly half way up to the level of the navel. On the 17th I removed a tumour of the left ovary as large as a cocoanut, consisting of two thin-walled cysts with an hour-glass constriction at their junction and numerous very small cysts close to the attachment of the tumour to the broad ligament. There was no twist of the pedicle. I did not observe anything to show whether the larger cysts which I removed had been ruptured or whether they had developed since my first examination. The facts are, however, that on Oct. 3rd, 1897, there was a considerable tumour and on Oct. 12th there was no palpable tumour and on Nov. 8th there was a pelvic tumour extending nearly half way up to the umbilicus.

The rapid changes in the physical signs in this case seem sufficiently interesting to be noted. It is obvious that such changes might give rise to unjust reflections on the diagnostic skill of the practitioner and perhaps to most serious damage to the professional prospects of a young man.

Portman-street, W.

NOTE ON A CASE OF INTESTINAL OBSTRUCTION DUE TO INDURATION OF THE GREAT OMENTUM.

BY T. ARMSTRONG BOWES, M.A., M.D., B.C. CANTAB.

A MAN, aged sixty-six years, came under my observation in June, 1895. At that time he was the subject of ulceration of the left leg. The lower half in nearly the whole circumference was a discharging ulcer with three sinuses leading to a thickened tibia. In addition to this lesion he had a scar on the forehead very suggestive of a healed gumma with exfoliation of the outer table of the frontal bone. A nasal intonation of the voice was present without apparent cause in the soft palate or nose. In addition there was a marked condition of knock-knee on the left side with considerable enlargement of the internal condyle of the femur. The case was regarded as one of tertiary syphilis. During the succeeding two years he had occasional attacks of vomiting which easily yielded to treatment, and his leg condition improved but never entirely healed up till just previously to his last illness, when the ulcer was replaced by a firm white scar with cessation of discharge from the sinuses. For some months previously to his death he was subject to constipation. On Dec. 17th, 1897, he commenced to vomit with concomitant pain in the epigastric region. His bowels were relieved by an enema, and nothing was retained by the mouth. Under treatment, however, the stomach became less irritable, and some amount of nourishment was subsequently retained with occasional vomiting. The vomit was not fæcal. On inspection of the abdomen there was nothing abnormal to be noted, but on palpation there was discovered lying across the abdomen from the right lower to the left upper regions an ill-defined fixed resistance, best felt on the left side just above the umbilicus, at which spot the fingers below and to the left could define an edge on a level with a transverse division of the rectus muscle, giving the impression of a tumour, while at no other point could the limits of it be differentiated. There was no fluid in, or distension of, the abdomen. On Dec. 25th, in spite of his illness, he obtained a small portion of currant cake which he retained. No change in condition occurred till ten days later when with renewed vomiting the currants were returned undigested, the vomit having a faintly fæcal odour. As there had been no relief from the bowels for seven days an enema was administered with practically no result. From this date the vomiting was distressing, everything by the mouth being immediately returned, and although fed by nutrient enemata his condition did not improve. On Jan. 11th, 1898, it was obvious that he had peritonitis and death ensued on the following day.

A post-mortem examination revealed the presence of free non-fæcal fluid in the peritoneal cavity, with a few flakes of lymph here and there. The large intestine was empty, the small one contained a little fæcal matter. The ill-defined resistance proved to be the great omentum very much indurated surrounding the transverse colon, the resulting contraction having occurred to such an extent that the lumen of the gut for a length of six inches or more would just admit a fine penholder. The stomach was closely attached to this, but there was no abnormality or disease of it. The pylorus, pancreas, and liver appeared to be natural.

I am indebted to Dr. C. P. White, pathologist to the General Hospital, Birmingham, for examination of the specimen, and he reports: "Microscopical examination shows great increase of fibrous tissue which stains extremely badly, and here and there a few nodules of granulation tissue; the colon wall contains a large excess of fibrous tissue, and there is some hypertrophy of the muscular coat." The absence of evidence of malignant disease after death and the lesions present during life would suggest a syphilitic origin of the induration of the omentum.

Herne Bay.

A CASE OF CHLORODYNE POISONING; RECOVERY

BY D. J. FREEMAN, L.R.C.P., L.R.C.S. IREL.

ON June 1st, 1898, I was called at 2 A.M. to attend a married woman, aged fifty-three years. On entering the room I found that the patient was lying on her back in bed in a comatose condition and breathing stertorously. The pupils were normal but insensible to light. The pulse was hard and wiry, being 80 per minute, and the skin was burning hot, the temperature being 102° F. The teeth were clenched. I was told that she had just had two fits in quick succession and whilst my informant was speaking the patient gave a deep, forced expiration, something like an aura epileptica seemed to pass over her frame, and for a minute or more the body writhed in a convulsive seizure, grinding of the teeth, distortion of the face, and bending of the body to the left side (pleurosthotonos) occurring. Then she relapsed into a state of profound coma, the respirations were inaudible, the pulse was imperceptible at the wrist and for a moment we thought that she was dead. Artificial respiration was tried with partial success. Just then her sister rushed in to say that she had been told that the patient had taken nearly the

whole contents of a ninepenny bottle of chlorodyne—an ounce in quantity—that night on going to bed between 10 and 11 P.M. Cold affusion and other active measures were then employed, with the result that consciousness was restored, though with difficulty, and the patient was enabled to swallow the mustard emetics given. Vomiting soon took place and she slowly recovered, greatly exhausted by her perilous experience.

There is no previous history of fits or epilepsy in this patient's medical record, nor can I find in looking up the literature of chlorodyne poisoning—which is rather meagre, by the way—that convulsions are mentioned as a symptom; stertor, coma, &c., are the usual features. It is also noticeable that so long a period—four hours—should have elapsed between the absorption of the poison in such a large dose and the all but fatal effects. With reference to the amount taken, nearly an ounce, Dr. Stevenson relates a case from THE LANCET (1871) of a young lady who was poisoned by two divided doses—one drachm each—taken at short intervals. He also mentions that Dr. Dowse records an instance of a man who was found insensible on the pavement with an ounce bottle of chlorodyne empty by his side and who subsequently recovered; the poison had no doubt been swallowed but a little time before he was found. No two samples of chlorodyne obtained from separate sources are alike; hence, perhaps, the difference of results, &c., from poisoning by chlorodyne.

Brighton.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

SEAMEN'S HOSPITAL, GREENWICH.

A CASE OF ADDISON'S DISEASE, WITH MILIARY TUBERCULOSIS AND OLD PULMONARY TUBERCULOSIS; SYNCOPE; NECROPSY.

(Under the care of Dr. J. ANDERSON.)

THOUGH much recent work has been done on the subject of the suprarenal bodies we are not even yet in a position to explain satisfactorily the symptoms of Addison's disease. The theory that these capsules normally elaborate an internal secretion is supported by many observers, among whom may be mentioned Rolleston in his valuable Goulstonian Lectures at the Royal College of Physicians of London in 1895[1] and Schäfer and Oliver.[2] Schäfer and Oliver have conclusively shown that the internal secretion of the suprarenals has a very powerful action on blood-pressure, causing contraction of all the peripheral arteries. It also acts directly on the heart. It is therefore extremely probable that the great weakness so noticeable in Addison's disease is due to a lack of this secretion. It is more difficult to explain the pigmentation which is generally present, though absent in the case related below. For the notes of the case we are indebted to Mr. A. E. Griffin, house physician.

A boy, aged fourteen years, was admitted into the Seamen's Hospital on Jan. 7th, 1898. It was stated that he was suffering from a pleuritic effusion, possibly an empyema. On admission he was collapsed; the pulse was 130 and barely perceptible and the temperature was 97·6° F. The patient said that he had been laid up in bed for three weeks with cough and expectoration; for the whole of this time he had had gradually increasing pain in the abdomen, with constipation; and daily vomiting had occurred independently of food. He was fair, the skin being clear and pale; he was emaciated and his lips were dry. The tongue was slightly furred, but was red at the edges and at the tip. The chest was of a rickety type, with some "beading." He lay on the right side and was apparently in continual pain, which was referred to the abdomen above the umbilicus; he also complained of pain in the right iliac fossa. The chest was thinly covered, the movements were impaired, and there was retraction at both apices; the percussion note over the lungs was impaired on both sides, front and back. The breath sounds were weak all over. No adventitious sounds were to be heard except over the middle lobe and over the lower part of the right lower lobe where a few fine râles with inspiration were audible; expiration was not prolonged. Vocal resonance and vocal fremitus were indifferent on both sides, but there was no notable difference between the two. The apex beat of the heart was seen and felt in the fifth space in the nipple line, but cardiac dulness was not enlarged upwards or to the right; the sounds were weak but normal; the second sound was accentuated over the pulmonary cartilage. The abdomen was retracted; there was general tenderness especially in the left hypochondrial region. The liver and spleen were not felt; there was no distension, sense of resistance, or dulness. On Jan. 8th the pulse was 120 and very small, the respiration was normal, and the temperature was 99°. The patient complained of great pain under the left costal margin. He had a constipated stool after the enema which was given on admission, but he did not retain the enema on the 8th and there was incontinence of fæces. On the 8th, 9th, and 10th the patient vomited after food, but the abdominal pain gradually ceased and the bowels became constipated; his general condition improved, but his appetite was always poor. On the 15th he vomited twice after breakfast. On that date the tongue was clean and there was no abdominal pain or tenderness. The pulse was still 120 and weak; the physical signs in the lungs had not altered. The bowels were kept open by small doses of castor-oil. On the 18th some abdominal pain referred to the epigastric region was again complained of and he refused food. The temperature continued to be normal. On the evening of the 19th the patient while lying in bed suddenly became cyanosed and dyspnœic. When seen he was in great fear of impending death. The pulse was hardly perceptible and was 144 per minute. He did not react to stimulants (injections of ether and strychnine) and died from cardiac failure ten minutes after the commencement of the attack.

Necropsy.—A post-mortem examination was held on Jan. 20th. Both lungs were found to be firmly bound down by old adhesions with the exception of the right middle and lower lobes, where there were a few recent adhesions which were easily broken down. Over the whole of the left side the pleura was greatly thickened and contained masses of cartilaginous hardness. On section both lungs were seen to be thickly dotted with miliary tubercle, this condition being most marked in the upper lobes. At the base of the left upper lobe, which was somewhat collapsed, there were two small thick-walled cavities, each of the size of a hazel-nut and one containing a cretaceous nodule. The right middle and both lower lobes were congested and œdematous. The bronchial glands were enlarged and pigmented, but there was no caseation. The heart was small; all the cavities were dilated and filled with dark clot. The muscle substance was poor; the valves were normal and there was no pericarditis. There was no excess of fluid in the abdomen and no adhesions were present. The mesenteric glands were enlarged and firm in consistence, but they were not caseated. The liver, kidneys, and spleen were congested. The intestines were injected, but with no signs of tubercle. The capsules of the suprarenal bodies were thickened and bound down firmly to the underlying structure. Each was four times the normal size; they were caseous and contained cretaceous nodules. The brain was normal. On microscopic examination the mesenteric glands showed infiltration of small cells without any giant cells. Sections of the suprarenals showed that the periphery was rich in typical small tubercles, many containing large multi-nucleated giant cells. The medulla of the suprarenal bodies contained caseous material, showing no definite structure under the microscope.

Remarks by Mr. A. E. GRIFFIN.—Dr. Anderson has kindly given me permission to report the above case, which is interesting on account of the fact that there was not the slightest sign of pigmentation on the skin, though the buccal mucous membrane was not examined. I find that Dr. Bramwell[3] points out the value of routine examination of

[1] THE LANCET, March 23rd and 30th, 1895.
[2] The Practitioner, September, 1896.
[3] Two Clinical Lectures on Addison's Disease, Brit. Med. Jour., Jan. 2nd and 9th, 1897.

the mouth in these cases. The physical signs in the lungs gave no evidence of the condition found post-mortem. The important diagnostic signs were extreme asthenia, emaciation, loss of appetite, vomiting with abdominal pain, and small rapid pulse.

ROYAL BUCKINGHAMSHIRE HOSPITAL.

A CASE OF PERFORATION OF THE ILEUM; NECROPSY.

(Under the care of Mr. E. G. WOOLLERTON.)

IT is difficult to give an explanation of the occurrence of the perforation in the following case which would be perfectly satisfactory. It is not quite clear from the report whether the whole intestine was examined at the necropsy. The situation of the perforations is in favour of their being due to the ulceration occurring in typhoid fever, but there seem to have been no other symptoms which would justify such a diagnosis. The previous attacks of abdominal pain and vomiting may have been due to a partial obstruction caused by a peritoneal band, and it is possible that the pressure was sufficient to cause local necrosis of the bowel wall, and so perforation, but though this explanation is possible it is by no means probable. We consider the case worthy of being put on record on account of this great obscurity as to the mode of origin of the perforation. For the notes of the case we are indebted to Mr. Horace Rose, house surgeon.

A woman, aged thirty years, was admitted into the Royal Buckinghamshire Hospital early in the evening of Feb. 25th, 1898, complaining of severe pain in the epigastrium. For several months past the patient had had attacks of "indigestion." Five weeks before admission she had a sharp attack of abdominal pain accompanied by symptoms of indigestion, vomiting, &c. The vomiting continued at intervals up to Feb. 24th, on which day feeling better she ate a hearty meat meal and did her work as usual. Towards the evening the pain in the abdomen returned with severity and the vomiting increased. The bowels were well opened during the day. There was no history of hæmatemesis or melæna.

On admission the patient was obviously in acute pain, the countenance being pale, pinched, and anxious. The pulse was 120, small and wiry but hard. The temperature was 98° F. but soon rose to 100°; she lay on her back with the knees drawn up, the abdomen being swollen and very rigid. There was no superficial tenderness but severe pain ensued on deep pressure being made. The abdomen was tympanitic on percussion and the liver dulness was almost absent, the respiratory movements being short, quick, and costal. Soon after admission the patient was very sick, bringing up greenish bilious fluid. An enema was given and slight fæcal evacuation resulted; a rectal tube was inserted and some flatus passed; she was given a mixture containing bismuth, hydrocyanic acid, and morphia. Although fairly under the influence of morphia she had occasional very severe attacks of pain; she was put on nutrient enemata, but they were not well retained. Two hours later the pulse was 130, the respirations were 40, and the temperature was 97°, her general condition being worse. Turpentine stupes were now applied over the abdomen. She was seen by one of the visiting staff, but her condition was considered to be too bad for operation. Towards night she was becoming more collapsed. Hiccough was frequent and troublesome. Early the next morning the temperature ran up to 108° and the patient died collapsed.

Necropsy.—With the assistance of Dr. Randal Smyth a post mortem examination was made. The body was well nourished, the heart and lungs being normal. Intense peritonitis was present all over the abdomen; the abdominal cavity contained free gas and about 10 oz. of thick, curdy pus; the intestines were covered with inflammatory lymph in places ¼ in. thick. The stomach was removed and opened, but was found to be quite normal. On examining the ileum a perforation was found of the size of a threepenny-piece which from without admitted the tip of the little finger; near it but separated by a narrow band of normal tissue was another perforation of about the size of a pin's head. The intestine around the perforations was dark but not gangrenous. When the perforation was first observed the intestinal contents were passing through it into the general peritoneal cavity. The perforations were situated at the edge of the gut farthest from the mesenteric attachment and about 12 in. from the ileo cæcal valve. There were several old and very tough peritoneal inflammatory bands in the abdomen; the rest of the small intestine was free from ulcers of any kind. The portion of intestine was excised and opened; there were no signs of ulceration at the site of perforation, but there appeared to be some slight constriction of the lumen of the bowel. The uterus and tubes were healthy.

Remarks by Mr. ROSE.—I do not know whether I am right in considering the perforation due to friction from an inflammatory band. It may have been due to embolus, but there was no sign of such condition observable and absolutely no trace of any foreign body. The case is interesting because of its acute onset (the patient being at her usual work the day before admission) and also because of the rapid development of dangerous symptoms no doubt due to the very large size of the perforation. The position of the perforation is peculiar and as far as I can find the literature on isolated perforations of the intestine is decidedly scanty.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Acute Leukæmia.—Influence on Gout of the Mineral Constituents of Vegetables.

A MEETING of the above society was held on June 14th, Mr. BRYANT, the President, being in the chair.

Dr. ROSE BRADFORD and Dr. BATTY SHAW read a paper on Five Cases of Acute Leukæmia. Two cases were observed in 1890, the remaining 3 in 1897. All the patients came under observation for anæmia, causing excessive pallor, weakness, swelling and ulceration of the mucous membrane of the gums, cheeks, or lips, and fever. The anæmia and weakness preceded the affection of the mouth. Most of the cases also presented purpuric hæmorrhages in the skin and in two cases there was some melæna. The cases all ran an acute and fatal course, the maximum duration of the illness being eight weeks. The lymphatic glands were enlarged in all cases, slightly in 4, and considerably in 1. The spleen was slightly enlarged in two cases. The blood showed a great excess of white corpuscles, varying from 1 white to 4 red in Case 1 to 1 white to 43 red in Case 4. Stained films of the blood were made in 3 out of the 5 cases and showed that the excess of white corpuscles was almost entirely due to the presence of great numbers of large lymphocytes. In 2 cases these formed over 90 per cent. of all the white cells present, and in the third case these formed 61·8 per cent., and the small lymphocytes 12·2 per cent., of the total number of white cells. In 2 cases a few myelocytes were present, and in all the polymorpho-nuclear cells were remarkably scanty. Post-mortem examinations were made in 4 cases. Similar cases had been described by Fraenkel, in 1895, as cases of acute leukæmia and called by some writers acute lymphatic leukæmia.—Dr. H. G. TURNEY quoted a similar case which he had had the opportunity of observing in a man, aged forty years, in whom the total duration of the disease was three months. The onset was insidious, attended with shortness of breath; one month after the onset purpuric spots were noticed on the skin and shortly before death the gums became tender and swollen. The examination of the blood showed a proportion of white to red as 1 to 15, the white cells were large lymphocytes, the myelocytes and the polymorpho-nuclear cells being few in number; there were, however, a considerable number of nucleated red cells. The necropsy revealed no enlargement of the lymphatic glands; there were numerous purpuric spots over the serous membranes; the bone marrow was of a plum-red colour; the liver was enlarged and fatty and gave the iron reaction in an extreme degree. Dr. Turney thought that no hard-and-fast line could be drawn between the various types of the disease.—Dr. ROLLESTON considered that it might be difficult to distinguish between acute Hodgkin's disease with a terminal lymphocytosis and some of the cases like Dr. Bradford's; one of the authors' cases might perhaps bear this interpretation. He referred to a case published in conjunction with Dr. Latham in which a case of Hodgkin's disease simulated a mixed leukæmia.—Dr. NORMAN MOORE asked Dr. Bradford

and Dr. Shaw if they could give any explanation of the rapid course of the disease. He had seen two cases following malaria and syphilis acquired in South Africa which had terminated within a year, but had seen no case so rapid as those quoted by Dr. Bradford.—Dr. BRADFORD, in reply, said that he agreed with Dr. Turney as to the difficulty of deciding the nature of these cases from the examination of the blood alone and pointed out that the disease had a characteristic appearance and when once seen was easily recognised and did not resemble acute Hodgkin's disease.

Dr. ARTHUR P. LUFF read a paper on the Influence on Gout of the Mineral Constituents of various Vegetables. He said that in the Goulstonian lectures of last year, whilst discussing the relative effects on the gouty process of animal and vegetable diets, he had stated that, in his opinion, it was of little importance as regards the production of uric acid from proteid matter whether the proteid be of animal or vegetable origin and that the same harm may result from an excessive consumption of either form of proteid. But although animal and vegetable proteids may react alike with regard to the production of uric acid, yet it is well known that different articles of diet exercise a different influence on the precipitation of sodium biurate and on the solution of uratic deposits. In connexion with this subject he had been able to demonstrate that the saline constituents of animal and vegetable foods exercise very different solvent effects on sodium biurate. From the results of these experiments it had appeared probable that if the mineral constituents of vegetables were present in sufficient quantities in the fluids of a gouty person they would not only delay the advent of an attack of gout by increasing the solubility of the biurate present in these fluids but would also, by their increased solvent effects on uratic deposits, facilitate the removal of the latter. Since the delivery of the Goulstonian Lectures he had carried out a long series of experiments on the mineral constituents of all the vegetables in ordinary use and the results of these experiments were embodied in this paper. The objects of this experimental inquiry were: (1) to ascertain the relative efforts exerted by the mineral constituents of various vegetables on the solubility of sodium biurate at the temperature of the human body, and therefore presumably on uratic deposits; and (2) to ascertain the influence, if any, exerted by these constituents in retarding the conversion of the sodium quadriurate contained in the fluids of the body in gout into the biurate. Obviously the elucidation of these points would have a material bearing on the treatment of gout. The method of carrying out the experiments to ascertain the solvent effects exerted by the mineral constituents of vegetables on sodium biurate was the same as that described by him in the Goulstonian lectures last year. The vegetables employed in the experiments were spinach, Brussels-sprouts, potato, asparagus, Savoy cabbage, French beans, lettuce, beet-root, winter cabbage, celery, turnip-tops, turnip, carrot, cauliflower, seakale and green peas. From the results obtained it appears that 0·05 per cent. and over of the mineral constituents of nearly all the vegetables very appreciably increase the solubility of sodium biurate. The solitary exception is in the case of the mineral constituents of green peas, which practically exert no influence whatever on the solubility of the biurate. He next endeavoured to ascertain whether these effects were due to the alkalinity of the vegetable ashes or whether they could be referred to any one saline constituent of the vegetables. The series of tables embodying the results of this part of the investigation demonstrated conclusively that the solvent effect of a vegetable ash on sodium biurate bears no relationship either of a direct or an inverse ratio to the alkalinity of the ash or to the proportions of potassium, sodium, calcium, magnesium, and iron salts present or to the proportions of phosphates, sulphates, and chlorides present. The following examples demonstrated this. The solvent effect on the biurate of the ash of Brussels-sprouts is high while its alkalinity is low; on the other hand, the solvent effect of the ash of celery is low, while its alkalinity is high. The solvent effect of the ash of spinach is high, while the proportion of potassium salts is low; on the other hand, the solvent effect of the ash of turnips is low, while the proportion of potassium salts is high. The solvent effect of the ash of potato is high, while the proportion of sodium salts is low; on the other hand, the solvent effect of the ash of seakale is low, while the proportion of sodium salts is high. Corresponding results were obtained with the calcium, magnesium, and iron salts, and with the phosphates, sulphates, and chlorides present in the vegetable ashes. These results, therefore, show that the solvent effect exerted on sodium biurate by the mineral constituents of vegetables is not due to any one constituent. He next proceeded to ascertain whether an artificially prepared ash of the same composition as the natural ash of one of the vegetables would exercise a similar effect in increasing the solubility of sodium biurate to that possessed by the natural ash. For this method of experimentation he selected the spinach ash, which has the greatest solvent effect on the biurate. An artificial ash was prepared, which was made with the same proportions of potassium, sodium, and calcium, and of sulphates, phosphates, and chlorides as those present in the natural spinach ash, and also of precisely the same degree of alkalinity. The results of the experiments with this artificial product on the biurate showed that it exercised in all proportions a deterrent effect on the solubility of the biurate, whereas the natural ash exercised a marked solvent effect. The only explanation which he could offer of these remarkable results was that in the natural ash there is some combination of the mineral constituents which cannot be artificially imitated, and that upon this natural combination of the salts is dependent the increased solvent effect exerted on the biurate by the mineral constituents of most vegetables. If this view be correct then modern science is but confirming the correctness of the practice of those ancients who employed vegetable ashes in the treatment of gout. Experiments were next undertaken in order to ascertain the effect exerted by the mineral constituents of the various vegetables on the conversion of sodium quadriurate into the biurate. It was well known from the researches of Dr. Bence Jones and of Sir William Roberts that sodium quadriurate, which is the form in which uric acid first appears in the blood in gout, is an unstable body and is gradually converted by combination with the sodium carbonate of the blood into sodium biurate, which latter body, on account of its comparative insolubility, deposits in the tissues and then constitutes the gouty uratic deposit. It is obviously of therapeutical importance to know whether the mineral constituents of any of the vegetables, in addition to exerting an increased solvent effect on the biurate, possess the power of delaying the conversion of the quadriurate into the biurate. The results of the experiments undertaken with this object showed that the mineral constituents of some of the vegetables, notably spinach, Brussels-sprouts, French beans, cabbage, turnip-tops, and turnips, very considerably delayed the conversion of the quadriurate into the biurate. The inference is that if such mineral constituents were present in suitable proportions in the blood of gouty subjects, and if at the same time proper measures were adopted for promoting the excretion of the quadriurate by the kidneys, the elimination of that body might be secured without the occurrence of any precipitation of the biurate into the tissues. The net results of all the experiments indicated that the mineral constituents of most vegetables increase the solubility of sodium biurate, and also in several cases delayed for considerable periods the conversion of the sodium quadriurate into the biurate. On the other hand, the mineral constituents of meat diminish the solubility of the biurate and, as Dr. Luff had shown elsewhere, exercise but little effect in delaying the conversion of the quadriurate into the biurate. He wished it to be clearly understood that he did not attribute the different effects of animal and vegetable diets on gouty subjects to the saline constituents alone. He thought, however, that the results of the experiments clearly showed that it is to the different mineral constituents of animal and vegetable foods and to the different physical effects they exercise on the quadriurate and biurate that one must look for a partial and perhaps a main explanation of the known facts that an excessive diet of the one tends to produce gout and of the other tends to retard it. From the results of these experiments it appeared that certain vegetables stand out prominently with regard to the effect exercised by their mineral constituents in both retarding the conversion of the sodium quadriurate into the biurate and in increasing the solubility of the latter. These vegetables were spinach, Brussels-sprouts, French beans, winter cabbage, Savoy cabbage, turnip-tops, turnips, and celery, and these he considered likely to prove most beneficial to gouty subjects. Of these, in so far as the effects produced by their mineral constituents are concerned, spinach occupies the foremost place,

both as regards inhibiting the decomposition of the quadriurate and increasing the solubility of the biurate. On account of this double beneficial action possessed by vegetable ashes on the chemical portion of the gouty process, it had occurred to him that the free use of a table salt composed of the ashes of certain of the vegetables in place of common salt might prove advantageous to the gouty. He was therefore having different mixtures of the mineral constituents of various vegetables prepared, with which he proposed to experiment in order to ascertain which combination was likely to prove the most efficacious to gouty subjects. He hoped to be able shortly to publish the results of his experiments with these vegetable table salts.—Dr. EWART congratulated Dr. Luff on the excellent results which he had obtained and thought that the practice of using a vegetable diet would prove to be scientifically correct by his researches.—Dr. HAIG thought that Dr. Luff had hardly shown what the salts were which produced this greater solubility of biurate of soda nor had he shown how they acted; he viewed the facts brought forward by Dr. Luff in a somewhat different way; in the ash of the various vegetables examined the constituents might be divided into two groups, those which "make" for solubility and those which "make" for insolubility, and if one takes certain vegetables from the table arranged by Dr. Luff one finds that in spinach the "soluble" preponderate over the "insoluble," whereas in seakale the "insoluble" preponderate over the "soluble"; in cabbage, which occupies an intermediate position, the "soluble" and "insoluble" constituents are more equally balanced. The result obtained is not that of one constituent, but the balance of the whole. He further pointed out that gout was due to the admission of uric acid to the body and not to its solubility in the blood and that although a table salt, as suggested by Dr. Luff, might be used with some advantage he thought it would be no remedy for gout.—Dr. LUFF, in reply, said that he thought Dr. Haig had misunderstood the object of the paper, since he had been dealing with the solubility of sodium biurate and not with that of uric acid.

BRITISH GYNÆCOLOGICAL SOCIETY.

Exhibition of Specimens.—Dysmenorrhœa.

A MEETING of this society was held on June 9th, the President, Dr. MACNAUGHTON JONES, being in the chair.

Mr. SKENE KEITH showed Ovaries illustrating a Cause of Failure of Apostoli's treatment.

Mr. CHARLES RYALL showed a specimen of Uterine Fibromyoma removed by Abdominal Hysterectomy.

In the discussion on these specimens the PRESIDENT, Dr. GILES, Dr. ROUTH, Dr. BANTOCK, Dr. BEDFORD FENWICK, Dr. HEYWOOD SMITH, Dr. BURLEIGH-ROBINSON, Dr. PURCELL, and Dr. SNOW took part.

Dr. GRANVILLE BANTOCK read a paper resuming the discussion on a former paper on Dysmenorrhœa by Mr. Skene Keith. He recognised three typical forms of anteflexion as follows: (1) that in which the flexion occurs at the junction of the body and cervix, in which the body and cervix are both directed forwards, the former lying upon the bladder and the latter in the axis of the vagina; (2) that in which the body of the uterus may be in fairly normal position, but the cervix is bent forwards, the flexion occurring in the cervical portion; and (3) that in which the anteflexed uterus, the bend being at the internal os, lies on its back in the bottom of Douglas's pouch. He quite agreed with Mr. Keith in the view that in a case of dysmenorrhœa with anteflexion the bend *per se* was not alone the cause of the pain. It was only when congestion, with its resultant thickening of the mucous membrane from simple turgescence, or that change which goes by the name of hyperplasia, supervened, and they were face to face with a potential or actual organic stricture, that pain became a prominent symptom. Mr. Skene Keith, in his paper, had said, "The patient will tell you that she has suffered from pain since she first begun to menstruate." On the contrary, his experience told him that even in an extreme case there was no pain at the beginning of menstruation beyond the backache which is so common in the majority of apparently healthy women, and it was not until one or more years had elapsed that the special pain began, at first in a minor degree, but gradually increasing up to the age of maturity. The exception to this would be found in the case in which the patient happened to be the subject of catarrh when the menses first made their appearance. His explanation of the course of events was as follows. From the very beginning—assuming that there was no catarrh and consequently no congestion—the flexion caused some retardation of the flow with no more pain than the ordinary backache or a sense of weight in the pelvis; the frequent repetition led by degrees to stasis of blood in the organ, in other words to congestion, and pain of special character gradually came on, yet varying from time to time, probably according to variations in the degree of congestion. That there was a retardation of the menstrual flow was clearly shown by the character of the discharged blood—as in all cases of obstructive dysmenorrhœa from stricture, organic or otherwise—and by the fact that in every well-marked case of the kind under discussion the cavity of the uterus was more or less enlarged, half an inch or more. The presence of leucorrhœa was the outward sign of congestion and the menorrhagia often assumed the form of protracted menstruation rather than actual excess, the discharge being usually dark coloured, often treacly, and changing to a dirty brown colour. On four occasions Mr. Keith made use of the term dysmenorrhœa qualified by the adjective "uterine." He would like to know what precise meaning he attached to this qualification. Did he mean that there was a form of dysmenorrhœa other than uterine? Did he accept the doctrine of ovarian dysmenorrhœa, for instance, to say nothing of the various forms enumerated by one of the speakers who had taken part in this discussion? If so he joined issue with him on a very important point and boldly affirmed that there was no such thing as ovarian dysmenorrhœa. It was true that patients often referred much of their pain to the region of one or both ovaries. But if care were taken to analyse these cases it would be found that the seat of the trouble was the uterus, the pain being referred to the ovary, as in hip-joint disease the pain may be referred to the knee. As to treatment he recognised only three rational methods: (1) division of the cervix; (2) the stem pessary; and (3) dilatation. No operation upon the external os could avail anything when the condition to be remedied had its site at the internal os. In regard to pessaries he believed that no vaginal pessary was of any value in the treatment of anteflexion. For dilatation he regarded the method by graduated bougies as being the best. It generally required to be repeated several times at intervals.—Dr. ARTHUR GILES said that his experience was that in many cases of anteflexion dysmenorrhœa existed from the onset of menstruation; but two forms were to be distinguished, that in which the pain had a congestive origin—here it might come on later—and that in which it was associated with neurosis—here it was generally present from the first. In the latter class of case all local treatment was likely to prove unsuccessful. He took exception to the term "obstructive dysmenorrhœa." In these cases the flow was generally scanty, so that the blood could find its way through even a narrowed channel; moreover, if "obstruction" were present an accumulation of blood would occur behind the seat of obstruction and this was never found. He believed the pain to be due partly to painful contractions and partly to compression of the swollen and hypersensitive mucosa. Dudley's operation seemed to him to fulfil the two main indications required: first, permanent abolition of the flexion; and secondly, permanent widening of the canal; but there were cases, probably the neurotic class above mentioned, in which it would not be successful. He believed there were cases of dysmenorrhœa other than those of uterine origin, notably those due to inflammatory pelvic conditions, such as salpingitis, cöphoritis, and cellulitis.—Dr. C. H. F. ROUTH said that dysmenorrhœa might be due to spasmodic contraction situated at the os internum: this could be demonstrated by the constriction of a tent placed in the uterine cavity. The condition might be remedied by anti-spasmodic drugs and by depletory measures such as leeches and division of the os externum; in other cases Greenhalgh's hysterotome answered well, but it had to be carefully used. His own practice was the introduction of a tangle tent wrapped round with cotton wool soaked in carbolic acid. This acted both as an anæsthetic and as an antiseptic. After some dilatation had been secured by this means he introduced the pessary which he had devised for the purpose; this could be worn from six to twelve months.—Dr. BUTLER HOGAN agreed with Dr. Bantock that division of the external os alone was not sufficient. For dilatation he

preferred graduated bougies. He had also had good results from cocaine irrigations.—Dr. HEYWOOD SMITH thought that Dr. Bantock was a little too sweeping in his statements as to the pathology of dysmenorrhœa, for it seemed to him that ovarian dysmenorrhœa was a well-established condition associated especially with cirrhotic ovaries. For treatment dilatation alone often failed; it should be followed by slight bilateral incisions carried through the mucosa and muscularis at the internal os. After dilatation he employed a glass stem pessary, which was clean and non-irritating. Duke's spiral stem also answered very well.

KIDDERMINSTER MEDICAL SOCIETY.

Exhibition of Specimens.—Peritonitis.

A MEETING of this society was held on May 27th, Mr. W. HODGSON MOORE being in the chair.

Mr. J. LIONEL STRETTON showed the following specimens. 1. A Dermoid Tumour of the Ovary removed from a woman aged forty-two years. She had been an in-patient two months previously with caries of the jaw and had never had any abdominal trouble. On opening the abdomen there was a considerable escape of clear amber-coloured fluid—a gallon or more—and the tumour was found adherent to the great omentum, which required ligaturing before removal. The solid portion of the tumour weighed 2 lb. and there was an opening about its centre as if a large cyst had been ruptured. The patient made a satisfactory recovery. Mr. Stretton commented upon the small amount of discomfort associated with the development of the growth. It seemed probable that the escape of fluid into the abdominal cavity first caused sufficient symptoms to attract her attention. 2. A portion of the Stomach and Great Omentum removed from a woman aged fifty-seven years. There was a considerable amount of adhesion and the transverse colon was wounded in removing the growth; this and the large gap in the stomach were closed with Lembert sutures. The amount of stomach removed was about one-third. The patient was very much collapsed. She never recovered from the shock and died eighteen hours afterwards. 3. Fifty-nine Gallstones removed from a woman aged fifty-seven years. She had been ill for four months, the last six weeks in bed, and had lost flesh rapidly. There had been many attacks of colic and she had been deeply jaundiced. The case exemplified the advantage of an exploratory incision. She had lost so much flesh that her attendant thought she had malignant disease, but after the operation she very rapidly improved and was up and about within three weeks. 4. A row of Ingrowing Eyelashes with their Roots removed from a woman aged fifty-two years. She had suffered for many years and had on several occasions had the lashes pulled out at various institutions. A flap of the conjunctiva was dissected up and the whole of the roots and adjacent tissue dissected out in one piece, a couple of catgut sutures bringing the flap into position.

Mr. OLIPHANT read notes of a case of Peritonitis treated with anti-streptococcic serum. The woman was twenty-eight years of age and was admitted with metrorrhagia following an abortion four years previously for which the uterus was curetted on April 20th. Although every precaution was taken she developed an attack of acute peritonitis and became exceedingly ill. Her condition was far too serious for any operative interference and as all other treatment had been tried without benefit and as she seemed to be dying it was decided to give her some of the serum. On May 3rd at 11.30 A.M. 10 c.c. (Institute Pasteur) were injected into her left flank. There was no change in the temperature or pulse but she felt better in the afternoon. On the 4th the dose was repeated. The temperature fell gradually to normal but rose again in the evening; the abdomen was less tender and less distended. On the 5th the dose was repeated. The temperature fell to normal, the abdomen was free from distension, the patient was taking nourishment well and was much brighter. She continued to improve and her temperature remained normal, but there was still pain and tenderness in the left iliac region, so on the 20th an exploratory incision was made. There were a considerable amount of adhesions around the left tube and ovary and a small collection of pus was in the left broad ligament. This was swabbed out and a drain inserted. The patient was now convalescent. Whether the serum saved her life it was impossible to say, but it appeared probable that it caused a cessation of the peritonitic mischief, for these symptoms commenced to abate as soon as it was administered.

Mr. OLIPHANT also related the case of a man, aged fifty-six years, with a Sloughing Gummatous Mass involving the Left Tonsil and Soft Palate. He was admitted under the care of Mr. Hodgson Moore a month previously. The case presented all the appearances of malignant disease and the man denied a specific history, but under large doses of iodide of potassium it was rapidly improving.

Mr. OLIPHANT showed two enlarged Bursæ Patellæ removed from a girl aged eighteen years.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.—Rheumatic Myositis in its Acute and Chronic Form.—Operative Treatment of Enlarged Prostate.

THE ninth ordinary meeting of this society was held on June 1st, Dr. JAMES CARMICHAEL being in the chair.

Dr. ALEXANDER BRUCE showed a patient, a woman, aged twenty-five years, who suffered from a Congenital Displacement of the Right Scapula. The condition is very rare. The scapula was much elevated and there was partial ankylosis of the right shoulder-joint, the movements of the arm being very restricted. The right clavicle was much raised and concave forwards throughout its whole length. The trapezius was present and the electrical reactions were normal. The condition came on within a period of three months after birth.

Dr. BRUCE next showed a plaster cast of the entire figure of a man suffering from Achondroplasia. His total height was only a little above 4 ft. and there was marked shortening of the legs, thighs, arms, and forearms. The trunk was also short, but not nearly so shortened in proportion as the limbs. The head was well formed and the intelligence was good and except for the distortion of the limbs he was normal in every other way. The ends of the bones were very much enlarged, especially those of the ankle-joint. The hands were short and broad and the fingers were in the characteristic condition, spread out on either side from a line passing down the division between the third and fourth fingers. A skiagram showed that the bones of the phalanges were very short and that the first phalanges were extraordinarily broadened. The lower end of the radius was very large and the scaphoid was peculiar in shape. The patient was the father of two perfectly healthy children and no other member of his family had any similar complaint.

Dr. NORMAN WALKER showed a child suffering from Lichen Scrofulosorum. Dr. Crocker says that the disease is much more common than is usually believed and is often overlooked. In this case the eruption was chiefly marked on the back. The disease had greatly improved under the local application of cod-liver oil. The second case exhibited was that of a girl under treatment for Frontal Sinus Disease. She also possessed a bald spot on the anterior part of the scalp. This resembled alopecia areata, but the edges were red, raised, and granular. A second spot had formed just above the first, and, beginning as a vesicle, was following a similar course. It seemed to be a case of folliculitis decalvans and a hair from the vicinity showed the presence of cocci.

Dr. ALEXANDER BRUCE showed the following specimens: 1. A case of large Aneurysm of the size of a bean of the Anterior communicating Artery of the Brain. It gave rise to anomalous symptoms during life: intense headache and hysteroid fits, optic neuritis, and slight paresis of the third nerve due to some meningitis. It exerted pressure under the anterior tip of the lateral ventricle and latterly burst into it. The patient died with symptoms pointing to such hæmorrhage. 2. Another Aneurysm on a small branch of the internal carotid which had pressed on the third nerve and led to a sub-dural hæmorrhage. The patient was an old woman who showed signs of an imperfectly developed crossed hemiplegia. The paralysis of the arm remained, while that of the face was transient. There was a variable paralysis of the arm and leg. The pressure had caused oculo-motor paralysis. The aneurysm had then ruptured and blood had escaped over the whole extent of the left hemisphere and hence the paresis. The sub-dural hæmorrhage presented all

the appearances of pachymeningitis hæmorrhagica, but it was adherent to the dura mater and only depressed the brain tissue. The case, Dr. Bruce considered, was almost unique. 3. Specimen from a case of Diabète Bronzé—a condition rare in this country. The skin was darkened and bronzed in character. There was enlargement and cirrhosis of the liver and a great deposit of the sesquioxide of iron in the nerve cells and fibrous tissue bundles. This deposit was found largely as granules in the spleen and heart. 4. A series of specimens were shown under the microscope illustrating the important part played by Arterial Sclerosis in causing hæmorrhage. Dr. Bruce thought that the occurrence of miliary aneurysm was over-estimated as a cause of hæmorrhage, while the part played by arterio-sclerosis was underestimated. 5. A specimen from a man over seventy years of age admitted to hospital suffering from stupidity and complete right-sided hemiplegia. The symptoms resembled those of an ordinary severe hæmorrhage into the basal ganglia. At the necropsy, however, under the dura mater a cystic semi-fluid mass was found compressing the brain tissue over the motor areas. It was only slightly adherent to the dura mater and was a partially organised thrombus the origin of which was not apparent as it had no communication with any vessel. It was stripped off quite easily from the brain and dura mater. The symptoms had lasted about three weeks.

Dr. NORMAN WALKER exhibited under the microscope sections of Lupus Erythematosus and of Acne.

Dr. HARVEY LITTLEJOHN showed: 1. The Heart of a Woman who died suddenly while in bed. She had suffered for two years from rather indefinite symptoms. The post-mortem examination showed a large organised clot on the anterior wall of the left ventricle. It was probably an aneurysm of the heart wall due to infarction. The clot was firmly organised and the cardiac muscular wall was gone, leaving only the epicardium and the adherent clot. 2. Specimen of Suicidal Cut Throat from a woman found dead on her kitchen floor by her husband when he came downstairs in the morning; a table-knife lay near her. It resembled a homicidal injury in that the injury was mostly on the right side and the incision was low down in the neck below the thyroid. Both the carotid artery and vein were cut on the right side. 3. Specimen from Ruptured Interstitial Pregnancy. The symptoms resembled those of acute irritant poisoning. 4. Old case of Cut Throat where the man recovered after dividing his epiglottis near the base. The cicatrix of this wound was clearly seen as was also that of the tracheotomy performed lower down. At a later date, however, he was more successful in committing suicide. 5. A specimen showing Cicatrix of an old Tracheotomy Wound. The trachea presented evident signs of constriction.

Mr. A. G. MILLER read a paper entitled Rheumatic Myositis in its Acute and Chronic Form. He noted that the causes of rheumatism were cold, damp, heredity, and barometric influence. The affection was often mistaken for articular rheumatism, especially when the affected muscle overlay a joint. There was pain, swelling, fever and constitutional disturbance to be noted along with this affection. The situation of the pain and swelling was chiefly at the origin and insertion of the muscle. The pain was increased usually by muscular action but not every movement of the muscles caused pain. The swelling, which was little in myositis, was well-marked in arthritis on account of the effusion into the joint. In myositis the effusion into the skin and subcutaneous tissue over the muscle caused a crackling. This was specially well-marked in pleurodynia. The affection usually subsided in a few days. In the chronic form of the disease the stiffness was more or less constant and with this there was muscular wasting. The points to note were (1) that the pain comes on in advance of the weather; (2) that the pain was often associated with a falling barometer but may be with a rising barometer if the wind be from the north or east; (3) the pain may subside when the rain had fairly set in; (4) mists caused advent of attack; (5) the onset of east winds may have the same effect even if there be no mist perceptible; and (6) pain may be conspicuously absent in cold, frosty weather if the air be dry. This was seen well by explorers in the Arctic regions. As regards the treatment nothing could be dogmatised. Of internal remedies the alkalies were good, as were also salicine and its salts. Iodide of potassium was useful in nerve affections, and Mr. Miller had found that a few drops of actea racemosa did great good in lumbago and stiff neck. Local treatment.—Dry heat always relieved the pain. Counter irritation in the shape of rubefaction was useful. The use of blisters was not to be commended, as on account of their pain the joint had to be kept at rest, and a stiff joint might result. Liniments were good if oily or rubefacient, as were also medicated (e.g., alkaline) fomentations. In chronic cases massage had great value, but the movements must be both passive and active. Mr. Miller had no faith in dietetic treatment. If any relief was obtained from the latter he thought there must have been a gouty element in the case. A dry, warm climate was the best for cases of chronic myositis. Mr. Miller was a sufferer from the latter affection and he fully described his own symptoms and the successful treatment adopted. His left shoulder became apparently ankylosed, but this was found to be due merely to muscular action. The hot douche rendered the arm freely moveable for the time, but the effect was transient. Much more benefit was obtained from the practice of movements which caused pain. Mr. Miller found voluntary muscular exercise to be even more useful than passive ones and specially those which caused pain. Any excessive movement was harmful, however. He noted a point not previously mentioned and that was that the affected joint felt cold to the touch. The conclusions he arrived at were: (1) that cases of myositis may be mistaken for arthritis and treated by rest, and this was harmful to cases of true joint inflammation as tending to ankylosis; (2) cases of apparent ankylosis from adhesions may be due to muscular contraction; and (3) cimicifuga racemosa was beneficial in rheumatic myositis.—Mr. JOSEPH BELL and Dr. CRAIG made some remarks on the paper.

Mr. ALEXIS THOMSON read a paper on Operative Treatment of Enlarged Prostate. He excluded from consideration those cases of successful catheter life where the term of life was not appreciably shortened. It was the critical cases with which surgeons had to deal, where catheter life had failed and complications had arisen which might end in fatal illness. The old procedure was to tide over the critical period by tying in a catheter or performing careful catheterisation twice or thrice daily; or, again, the bladder might be drained from the perineum or from above the pubis. The latter was not, however, always practicable, and a bladder fistula was not at any rate an ideal result. The methods available then were: 1. Either the destroying or dividing the prostatic tissue by means of a galvano-cautery. Bottini had used this method in about 80 cases with only 2 deaths. Much experience was, however, required to work with such an instrument in the dark and the method had not found favour in that country. 2. Suprapubic prostatectomy (McGill). This was feasible and advisable where there was a middle lobe projecting into the bladder. In certain cases the result was ideal. In one case operated on by Mr. Thomson two and a half years ago the patient was now well and had normal micturition. He had been enabled to pass several small calculi since the operation. 3. Double castration. Mr. Thomson had performed this operation in four cases of men advanced in life (from sixty-seven to seventy-six years of age); nearly all had retention. Every one had improved since the castration. The first case was done two and a half years ago and he had now normal micturition and the prostate was below the normal size. The second patient, operated on about the same time, used the catheter only once in the twenty-four hours. The third case was done about two years since and he only required now to use a catheter when he had retained his urine for a long time. In this case also the prostate had atrophied until it was below the normal in size. The last was the worst case and happened in a man aged seventy-six years. The operation was performed seven months ago and now he used the catheter twice a day only and painlessly. In several cases the contractile power of the bladder had greatly improved and instead of there being only a dribbling stream the flow was good. In all cases the general health had improved. One man had flushings and sweatings (like those of the climacteric) but in none was there any diminution in their mental or bodily vigour. All now enjoyed good rest at night and none regretted the loss of their testicles. 4. Vasectomy. Mr. Thomson had performed this operation once when he resected part of the vas deferens on one side. The patient was a man, aged seventy-five years, who had suffered for several years. Suprapubic drainage had to be performed later and the patient relied on this now. The conclusions arrived at were that in critical cases prostatectomy was to be

performed as it is comparatively safe. In other and unsuitable cases, however, castration seemed to be the best.—Mr. JOSEPH BELL agreed entirely with what Mr. Thomson had said. He had had no experience in vasectomy, however. Patients cannot always be persuaded to undergo a double castration and will as a rule only submit to this operation when very ill. Mr. Bell had found that rest in bed, careful diet, and regular catheterisation were very useful in improving matters in many cases and so tiding over the crisis. He had also found large doses of ergot and strychnine (as originated by Mr. A. G. Miller) to do great good, especially when the prostate was soft and boggy. He had noted the peculiar mental condition, melancholia and irritability, seen after castration.—Mr. A. G. MILLER, Mr. COTTERILL, Mr. SHAW MCLAREN, and Mr. WALLACE also took part in the discussion.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Gastric Ulcer.

A MEETING of this section was held on May 13th, Sir WILLIAM THOMSON, the President, being in the chair.

Mr. JOHN CAMPBELL gave the history of a case of Perforating Gastric Ulcer successfully treated by operation. The patient was a widow, aged thirty-five years. The thickness of the abdominal walls rendered a long incision necessary and it was accordingly extended from 1½ in. below the ensiform process to 1 in. below the navel. The perforation was as large as a threepenny-piece and was near the lesser curvature of the stomach, about 1 in. from the pylorus. The opening was plugged with gauze and the stomach area was packed round with towels which had been recently boiled. The edges of the opening were then trimmed with scissors and the raw edges were brought together by a continuous suture of fine silk, including the whole thickness of the stomach wall. Over this about a dozen interrupted Lembert sutures were placed and over all a piece of small omentum was tacked down by a continuous suture. The abdomen was cleaned by gauze sponges. A gauze drain was inserted in the upper angle of the wound, reaching well over towards the spleen, where the gastric contents had spread most freely. The lower three-fourths of the wound was closed by interrupted silkworm-gut sutures. Owing to the distension great difficulty was experienced in getting the abdominal walls to meet over the bowels. Iodoform dressings were applied. A copious enema given after operation proved very effective in relieving thirst. Nutrition was kept up for five days by enemata. Then feeding by the mouth was cautiously commenced, water being given first, then animal extracts, and then milk. The gauze drain was removed on the fifth day and the stitches on the fourteenth day. The abdomen was not flushed out because it was thought that the stomach contents had not spread far beyond the gastric region and that flushing might only disseminate them still further. Therefore sponging and drainage were relied on. The patient is now well and has been free from pain since the operation.—Dr. CRAIG, Mr. MYLES, Mr. FRAZER, and others discussed the case.

SECTION OF MEDICINE.

Membranous Colitis.—Dissecting Aneurysm.

A MEETING of this section was held on May 20th, Sir G. F. DUFFEY, the President, being in the chair.

Dr. W. R. DAWSON read notes on a case of Membranous Colitis. A man, about forty-two years of age, some three years ago became subject to habitual constipation which has since persisted. About a year later he began to observe shreds and patches of membrane in the fæces, and these appearances have been present ever since, but with aggravations at intervals of two or three months. At such times pieces of membrane came away in rather large quantities, mostly after the fæces, and there are some dyspeptic symptoms also, but no pain in defecation or on abdominal pressure. There is little or no general discomfort and the patient's health, spirits, and nutrition are excellent. The membranes are of varying size and appear to consist entirely of mucus, embedding large numbers of degenerated cells, mostly epithelial. The treatment is purely general, the bowels being kept open by enemata rather than purgatives, and there has been, on the whole, some improvement.—Dr. WALLACE BEATTY said that he had met with a somewhat similar case. The patient was a man in good health except that he was continually passing large quantities of membranous material from the bowels, associated with very obstinate constipation. He was twenty-seven years of age and had been under observation for many years. All kinds of remedies were tried without benefit. He was then placed on milk diet and cod-liver oil and he still continues the diet and is doing very well and able to continue his work and passes very little membrane. Such cases were very intractable and prolonged unirritating diet was the best treatment.—The PRESIDENT and Mr. DOYLE also discussed the case.

Dr. J. B. COLEMAN read the notes of a case of Dissecting Aneurysm. The patient was a man, sixty-five years of age, who whilst at work was suddenly seized with a violent pain extending from his lumbar region into his chest and felt faint, but did not lose consciousness. Within a quarter of an hour his lower extremities were completely paralysed. He had a "lead line" on his gums, well-marked arcus senilis, atheromatous arteries, hypertrophied heart, high-tensioned pulse, and the aortic second sound accentuated; his urine contained 2 per cent. albumin and a few hyaline and granular casts. Next day he was able to move his legs freely. On the following morning he was able to walk a few steps. He died suddenly, about fifty-two hours after the onset of the symptoms. The post-mortem examination showed the right pleural cavity to be filled with blood; the heart was large, there being hypertrophy of the left ventricle. A dissecting aneurysm extended from the arch at the level of the innominate artery and terminated in the left femoral artery an inch below Poupart's ligament. A large mass of freshly coagulated blood was effused between the tissues at the level of the arch and in the upper part of the descending thoracic aorta. From the abdominal aorta through the left common iliac, external iliac, and femoral artery the coats of the vessels were separated by a thin layer of coagulum, but no palpable thickening of the arteries was so produced. The intense pain at the onset was due to the primary rupture and separation of the coats of the aorta by the blood. The paraplegia was caused by the interference with the arterial supply to the lumbar cord, partly from thrombosis, partly from rupture of the origin of the lumbar arteries. The sudden death ensued on the rupture of the external wall of the aneurysm and the consequent escape of blood into the right pleura.—Dr. FINNY and Dr. KNOTT made some remarks on the case.

BOMBAY MEDICAL AND PHYSICAL SOCIETY.

Plague in Cutch Mandvi and Hubli.—A Plague Congress.

AN adjourned meeting of this society was held in the University Hall on April 15th, Dr. EDULJI NASHIRVANJI being in the chair.

Brigade-Surgeon-Lieutenant-Colonel J. S. WILKINS gave a concise account of the work done during the epidemic at Cutch Mandvi last year. Plague broke out there about February, 1897. The town is walled and about a mile square in area. It contains 40,000 inhabitants in ordinary times, but only about half that number when the speaker arrived there on April 27th. Six hospitals were formed for the various sects and the work of disinfecting and cleaning was carried out by 200 coolies sent from Bombay. The only exits from the town were gateways in the high walls, and of these all except two were kept closed, so that it was easy to trace the houses where deaths had occurred, as the bodies had to be taken through one of these gates. The daily average mortality for the first week in May, when the work commenced, was 121, and a weekly decrease in the mortality of 20 took place till the normal death-rate of 5 was reached in the last week in June. As many persons as possible were removed outside the city and in course of time most of the inhabitants were camped outside. The gates were again opened to all the people and the city allowed to be reoccupied about the end of June.

Surgeon-Captain M. A. T. COLLIE gave an account of the Plague History of Hubli, in continuation of the one formerly

read by Surgeon-Captain C. H. L. Meyer, an abstract of which appeared in THE LANCET of April 2nd, page 936. There were only 3 deaths from plague in the town in February and 7 in March. He called attention to the difficulty of diagnosing the disease with certainty and said that at least 60 per cent. of plague cases cannot be diagnosed without post-mortem and bacteriological examination.

Dr. THOMAS BLANEY then made the following motion, which was seconded by Dr. N. N. KATRAK, and adopted after a discussion :—

That a congress of the profession be held in Bombay in December next under the patronage of Government to consider the most appropriate means of dealing with plague epidemics in Indian cities, towns and villages.

Reviews and Notices of Books.

Tropical Diseases: A Manual of the Diseases of Warm Climates. By PATRICK MANSON, M.D., LL.D. Aberd., F.R.C.P. Lond.; Lecturer on Tropical Diseases at St. George's Hospital and Charing-cross Hospital Medical Schools; Medical Adviser to the Colonial Office and Crown Agents for the Colonies. With 2 Coloured Plates and 88 Illustrations. London, Paris, New York, and Melbourne: Cassell and Co., Limited. 1898. Price 10*s.* 6*d.*

BROADLY speaking, there are two ways of studying tropical diseases. One is that of the epidemiologist, who deals with them on a large scale, considers their geographical ranges, collates all the facts, the natural phenomena and sequence of events in relation to any given epidemic, and compares them with those of similar epidemics which have prevailed at other times or elsewhere or with other epidemics of a different nature in order to trace out their points of similarity or dissimilarity and to discover, if possible, whether any harmonious relation exists between them, in other words, the existence of any natural law to which they can be relegated. The other method is that of the clinical and local inquirer whose observations consist in the exhaustive and intelligent study of details mainly conducted along inductive and experimental roads of inquiry and aided by the microscope, test tube, and all the instruments and appliances which modern science can lend to his investigations. These methods are the supplement and complement of one another and both are necessary. But as the latter is obviously the more exact and sure, inasmuch as the observations can be concentrated on any and every given point in detail and subjected to physical science tests, so it has proved the most fruitful of results. Bacteriological researches have of late, as everyone knows, been keenly pursued in the investigation of disease in addition to those of a clinical and pathological nature, and the student of medicine has nowadays to be something of a naturalist in order to qualify him for inquiring into the nature of disease-causes. The more or less vague medical hypotheses about the existence and influence of vitalised agents as disease germs, which were the product of the speculative philosophy of some of our more sagacious and keen-sighted predecessors, have given way to, and been replaced by, doctrines founded upon the securer basis of scientific investigation. Notwithstanding that a certain amount of hasty generalisation and false inference was inevitable under the circumstances, there can be no doubt about the remarkable advances which have been made by recent discoveries in this respect, or about the trend of scientific opinion in regard to the very important part which biological investigations are bound to play in the future progress of medical and sanitary science.

Fresh from the perusal of Dr. Patrick Manson's Manual we have no difficulty in giving our opinion in regard to it. It is a good book, conceived and written in a scientific spirit and well up to date, and—not to omit in these utilitarian days a practical view of its merits—it strikes us as sound and judicious in regard to the general dietetic and therapeutical treatment of the maladies which it describes. The volume, which is of handy size and admirably illustrated, consists of upwards of 600 pages. The author tells us in his preface that it makes no pretension to being a complete treatise or anything more than an introduction to the important department of medicine of which it treats, but seeing that Dr. Manson has had long practical experience of the diseases of hot climates and has himself very successfully contributed to the elucidation of some of them we have no doubt that the hope he expresses that the work may prove of practical service will be realised. We have given our opinion in general terms of the impression derived from our perusal of this work because it would be impossible within reasonable limits of space to analyse and pass in review its contents. The introductory chapter deals with the Etiology of Tropical Diseases and is well worth reading as indicating the nature and spirit as well as the standpoint from which the subjects are regarded and handled. Section I. deals with fevers and very naturally Chapter I. starts with Malaria and the Malarial Parasite discovered by Laveran in 1880—the Plasmodium Malariæ, to the presence and proliferation of which parasite in the blood the condition which is known as malarial disease is ascribed. The principal reasons for this belief are briefly set forth, followed by an excellent descriptive account of the morphology and histology of the parasite considered in connexion with the intra-corporeal or human, its extra-corporeal, and its latent phases. So much has been written of late years on this subject that those of our readers who are interested in it are probably well acquainted with the facts, and there is therefore no need to dwell, even were it possible, at any length upon them. The subject is very carefully worked out by the author and the ingenious view suggested by him regarding the part played by the mosquito as the extra-corporeal host of the plasmodium, together with the various morphological changes which have been microscopically observed in the parasite, are clearly described and explained with the aid of excellent illustrations. The book is, as we have already pointed out, capitally illustrated throughout. The author, while setting forth the grounds on which he regards the mosquito hypothesis as a plausible and probable explanation of many facts connected with the history of malarial infection, is careful to state that he does not maintain that it has yet been thoroughly proved, but he nevertheless thinks that every effort should be made to establish or confute it. It will meanwhile prove a source of great satisfaction to Dr. Manson to find that Professor Koch in the interesting address he has just delivered at Berlin has taken up the same view and attributes the spread of malaria to the propagation of blood parasites by mosquitoes. The two will not, however, we think, be found to be conterminous, for although there may possibly be no malarious places or stations where there are not mosquitoes, there are mosquitoes in places where there is no malaria—no ague. Chapters II., III., IV., and V. deal with the classification and description of the malarial parasites and their associated fevers, to which is appended a useful tabular statement, modified from Mannaberg, of the characteristics of the various parasites; the morbid anatomy and pathology, in which the course of fever and periodicity in malaria and the theory of periodicity are considered; malarial cachexia and a brief chapter on the Etiology of Malaria. Chapter VI. discusses diagnosis and treatment in a way which seems to us to be clear and judicious. Yellow fever, bubonic plague, dengue, Mediterranean fever, kala-azar, tropical typhoid, heat stroke, and unclassed fevers are also considered in this section of the volume. The chapters on heat-stroke (heat exhaustion, sun-traumatism and siriasis) and on unclassed fevers in the tropics are interesting. There still remains

a good deal to be achieved in these directions, especially in regard to unclassed climatic fevers, before we can be said to have any precise scientific knowledge concerning them. In his remarks on siriasis—a term adopted by Dr. Sambon—Dr. Manson alludes to Dr. Sambon's assertion that the disease is a germ disease, like yellow fever or dengue, and, like these, is caused by some organism which demands for its development a high atmospheric temperature and certain, as yet unknown, local conditions. The chapter on Cholera enters fully into its bacteriology and discusses it very impartially and well. Dysentery, Sprue (Psilosis), Abscess of the Liver, Leprosy, are also carefully considered. The chapters on Beri-beri and Filariasis are especially full and good.

Ethnological Studies among the North-West Central Queensland Aborigines. By WALTER E. ROTH, B.A. Oxon., M.R.C.S. Eng., L.R.C.P. Lond. With 433 Illustrations. Brisbane: by Authority, Edmund Gregory, Government Printer, William-street. London: Queensland Agent-General's Office, Westminster Chambers, 1, Victoria-street. 1897.

THIS work, issued under the authority of the Government of Queensland, is one of the most remarkable which has issued from the press. Its author, who has since 1894 held the office of surgeon to the Boulia, Cloncurry, and Normanton Hospitals, has spared no pains or trouble to make himself intimately conversant with the language, manners, and customs of the aboriginal tribes which still exist in no small number in the North-West Central districts of Queensland. He has performed his task with a completeness which is worthy of all praise, and by pen and pencil has contrived to present an account which may well be taken as a model of well-ordered and profound ethnological research. We confess to be amazed at the wealth of detail which is to be found in these pages, and no small merit of the work is the thoroughly scientific manner in which it has been planned and executed. The first four chapters are devoted to language, first the spoken language, which is remarkably fully expounded and its grammar as elaborately discussed as in the most classical treatise of modern tongues. Mr. Roth has achieved much in mastering these tongues, and the examples which he gives of various grammatical phrases and expressions together with the vocabularies fill many pages. Of more general interest perhaps is the description of sign-language, which has apparently attained a pitch of perfection which could hardly have been imagined. This chapter is illustrated by several plates comprising no fewer than 213 separate illustrations, each conveying graphically the distinctive signs and their meanings. This section alone would form a monograph and might well have occupied all the time at Mr. Roth's disposal. However, these chapters are but introductory to the real subject matter of the book, which includes, as the titles of the ensuing chapters indicate, all the customs of the tribes. Thus we find first, in the "Search for Food," full descriptions of the edible vegetables and crops in the districts of Boulia, Cloncurry, and Leichardt-Selwyn; then the various animal foods, from ants and crayfish and molluscs to fish, emus and other birds of all kinds, the opossum, kangaroo, &c.—descriptions being given of the means adopted to catch or snare these animals. "Pituri" is the product of a shrub which is prepared in "quids" for chewing and is as much desired by the aboriginals as alcohol is by Europeans. Domestic implements and utensils, "dilly-bags," grindstones, fire-sticks, &c., are then described, and the huts and shelters. The subject of personal ornamentation and decoration is concerned mainly with modes of dressing the hair, the wearing of head fillets or feathers, piercing the nose and ears, evulsion of the teeth—the two central upper incisors—a practice which is dying out, in connexion with which is the interesting fact that in none of the languages of the district are there any *th*, *v*, *f*, or *z* sounds which require these teeth for their proper enunciation. Necklaces, armlets, chest ornaments, waist-girdles, and aprons made of human hair or "opossum string," phallocrypts of pearl-shells or "opossum string," are only worn on occasions of festivity and at "corroborees"—the ordinary custom being absolute nudity. Painting and feathering of the body are also in the main restricted to festive occasions or warfare. Here is described the practice of mutilations on the trunk and limbs, or "flash-marks," the raised cicatrices of incisions made transversely across the chest and abdomen, and occasionally on the back. Mr. Roth describes how these scars are formed. An interesting account follows of the "corroborees," or dancing and singing festivals, which usually last from sunset to sunrise and may be repeated for three or four nights. They constitute the primitive form of dramatic art and are prepared for by elaborate "dressing" and "decoration." The audience join in the singing and a full account is given by the author of one such performance of the "Molonga set" of corroborees which lasted over five nights, each night's performance being different. "Molonga" is apparently an evil spirit who would revenge himself in characteristic fashion were the corroboree not properly executed. Mr. Roth gives examples of some of the current fables in the Boulia district, the first of which we may quote.

The Water-hen and the Emu.

"An emu was hatching her eggs in close proximity to a small water-hen who was also engaged in the same interesting occupation. By-and-by both birds proceeded to walk along the grass for something to eat and in the evening returned to their respective nests. The same thing happened next day. But on the following morning the water-hen got up somewhat earlier than usual and went her way. The emu happening to see her neighbour's eggs said, 'Hullo! Big fellow eggs all same like mine; me take him,' and, shifting from her own nest, sat upon them. As the afternoon drew on the water-hen returned home, and when she saw the emu appropriating her eggs began growling, but being so much smaller a bird could not use force to turn her away. So she built a large fire and threw all the ashes over her opponent, who thus got all her feathers burned. In retaliation the emu threw her antagonist into the flames and burnt her legs for her, which resulted in their turning red.'

The games in which these natives indulge comprise the "return" boomerang, the "throwing-stick," the "whirler," games of ball and skipping-rope, "hunt the eye" (the primitive form of "hunt the slipper" of civilisation), which with "hide and seek" prove that in their pastimes these aborigines have much in common with our children. Travel for the object of barter introduces us to simple commerce and the curious custom of message-sticks, which take the place of letters and are used to carry orders at a distance for articles required. A chapter is devoted to fighting and weapons, and another to disease, accident, and death. Here we find superstition in full play, the pointing of the "death-bone" by the doctor or medicine man being held to be the common cause for calamities of this sort. It would be impossible to do justice to this chapter by any attempted summary of its contents which embrace the remedies and practices employed in treatment of diseases and accidents, some of the remedies being sufficiently disgusting. There would seem to be but few plants used for medicinal purposes, whilst a favourite remedy for diarrhœa is "clay pills." The rites of burial are described and the chapter closes with reference to the practice of cannibalism—not yet, although gradually becoming, obsolete. Rain-making is still in vogue in some districts, when special "corroborees" for the purpose are held.

The final chapter of the work, entitled "Ethnopornography," is not suitable for perusal by the general lay reader. It contains full details of the barbarous ceremonials

by which the youth of both sexes are in the separate tribes initiated into sexual life. The chapter contains other details concerning marriage, pregnancy, and labour, which may be contrasted with the customs obtaining amongst other aboriginal tribes. In conclusion, we may say that we think that Mr. Roth's researches will remain as a faithful record of savage life and an important addition to ethnological science.

JOURNALS AND REVIEWS.

The Veterinary Journal and Annals of Comparative Pathology. Edited by Principal WILLIAMS, F.R.S.E., F.R.C.V.S. April and May, 1898. London: Baillière, Tindall, and Cox.—The *Veterinary Journal* for April consists chiefly of proceedings of veterinary medical societies, and some of the papers contributed to these societies are of considerable interest. The original papers comprise articles on Infectious Pneumonia of Sheep, by W. R. Davis, New Veterinary College; A Case of Malignant Adenoma of the Stomach of the Horse, by R. B. Freeman, F.R.C.V.S.; Tumours in the Lateral Ventricles of a Horse, by A. M. Munro, M.R.C.V.S.; and a couple of cases of Tetanus—one in a cow recorded by R. Connochie, and two in horses by W. L. Gascoyne. An exceedingly interesting discussion at the Central Veterinary Medical Society on Mallein Reaction is here reported in full and is well worth careful perusal. The meetings of the other societies are fully reported, but their principal interest is for veterinary surgeons. A number of reprinted articles on Rinderpest, Bacteriological Researches on Certain Diseases connected with Public Health Work by Professor Delépine, Notes of News, and extracts from foreign journals complete this number. In the May number are several special articles—On Diseases of the Ear in Cats, by Henry Gray, M.R.C.V.S., a number of cases of Impaction, of Rupture of the Œsophagus in a Horse, of Dermoid Cyst of the Testicle, a case of Fractured Pastern, and one of Vomiting in the Horse due to a Mesenteric Embolus. An interesting discussion on the question—Is Tuberculosis Hereditary?—was opened at the Scottish Metropolitan Veterinary Medical Society by Professor Lauchlan Young, who comes to the conclusion that tuberculosis is disseminated in this country more through infection than hereditarily. Professor Young certainly brings forward a number of statistics collected from various sources to show that heredity plays very little part in the dissemination of tuberculosis amongst cattle. Principal Williams agreed that a sharp distinction should be drawn between what was hereditary and what was congenital, and he pointed out that the tubercle bacillus is comparatively rarely found in young animals, and especially in young cattle, and when it is found it is usually associated with tuberculosis of the brain.

The Veterinarian: A Monthly Journal of Veterinary Science. Edited by Professor METTAM. London: Adlard and Son.—In the April and May numbers of the *Veterinarian* Professor Cossar Ewart continues his articles on Hybrids with an account of Zebra Hybrids with Observations on the Relationships of the Zebras. He has now collected a very large amount of most important evidence which should be of very great value not only to those who take an interest in horses but to those who study telegony in any of its branches. In the April number Mr. Walter Heape of Trinity College, Cambridge, contributes an article on Artificial Insemination of Mares which will be of some interest to horse breeders. An article on Tuberculosis and Tuberculin, by Geo. R. Kinnell, M.R.C.V.S. Medfield, Mass., U.S.A., gives the results of a considerable number of experiments, from which it is concluded that by the judicious use of tuberculin tuberculosis can be eradicated from any herd of cows. It is here maintained that tuberculosis is not an hereditary disease and that so far as calves are concerned the danger to them from the use of the milk from tuberculous cows, though slight, is by far the most important. It is also held that, given an infected building, it is possible at comparatively small cost to render it entirely free from infection and a safe place in which to keep stock, so far, at any rate, as tuberculosis is concerned. In the May number the original communications are Notes on the Madrid Congress of Hygiene and Demography, by Mr. J. A. W. Dollar; a continuation of Professor Cossar Ewart's paper; a Note on Ghotiva or Ghotu in Buffaloes, by Veterinary-Captain H. T. Pense, F.Z.S., Principal Veterinary College, Lahore; on Picric Acid as a Wound Dressing, by the same author; and a note on the Presence in the Blood of Free Granules derived from Leucocytes, by A. E. Mettam, B.Sc., M.R.C.V.S. In both of these numbers there are in addition a number of clinical cases, editorial observations, and exceedingly good reviews of the veterinary literature for the month; notes on current topics, including observations on tuberculin and mallein, and reports of veterinary medical societies. The reviews and abstracts in these numbers are of more than average interest and fully maintain the high character of the *Veterinarian* for this class of work.

The Phonographic Record for June contains one of Sir W. R. Gowers's lucid unravellings of a problem in the diagnosis of cerebral disease showing how the presence of paralysis of the sixth nerve, amid signs of a general morbid process, enabled the existence of growth near the middle line in the upper two-thirds of the pons to be established. A useful paper on Extra-genital Chancres in Children by Dr. Deanesley, notes of a case of Spina Bifida by Dr. A. Hill Joseph, an account of a Neurotic Woman by Dr. Atchley, a concluding instalment of the humorous papers headed the Light Side of Medicine, and a reference to the health of the *doyen* of reporters (Mr. T. A. Reed) complete the number.

The English Illustrated Magazine for June contains a most interesting paper by Mrs. (Janet) Ross upon the Confraternity of the Misericordia at Florence. The confraternity, as is well known, is an ambulance guild the members of which work from pure love. In the words of their regulations, "they shall practise works of mercy and charity; especially shall they bury the poor and miserable dead without retribution or guerdon, doing this solely for the love of Jesus Christ, who suffered death and passion for the love of us." Nearly every class of society is represented in this noble body of workers, from the highest almost to the lowest, and their services in the various epidemics of plague and, to come down to later times, in the cholera epidemic of 1855 were beyond praise. Something of the sort is badly wanted in our overgrown London, more especially as regards the burial of the "poor and miserable dead." The horror with which a "parish funeral" is regarded, and rightly so, by the poor is well known. Differences of nationality, of climate, and of social customs will have to be allowed for, but surely it would be possible to start some kind of body, call it a guild, or a brotherhood, or a society, or anything, so long as its members would and could do the same merciful deeds as the Brethren of the Misericordia.

THE MARSHALL MEMORIAL FUND.—It has been decided that the memorial to the late Dr. Henry Marshall shall take the form of an exhibition or substantial money prize to be given yearly for the encouragement of medical students at the Bristol General Hospital and also that a tablet shall be placed in the Bristol Cathedral in his memory. Messrs. Stuckey's Banking Company, Bristol, will receive subscriptions for the fund.

Analytical Records
FROM
THE LANCET LABORATORY.

(1) SANOSE; AND (2) SANOSE BISCUITS.
(A. AND M. ZIMMERMANN, 9 AND 10, ST. MARY-AT-HILL, E.C.)

THE fact that albumose occurs in milk and exerts a favourable influence in regard to the digestibility of the milk-proteids has led to the preparation of "sanose," which consists of 80 per cent. casein and 20 per cent. albumose. According to our analysis this statement is calculated upon the total amount of organic matter, since we found 9·96 per cent. moisture and 3·10 per cent. mineral matter. Sanose is a white powder without perceptible taste. With water it forms a milky fluid which on careful filtration gives the characteristic reactions of albumose but not peptone. Sanose must therefore rank high in the scale of nutrients and, being practically neutral in character, it affords a means of administering a powerful, because easily digested, food without drawbacks in regard either to taste or smell or other physical peculiarity. The compound is evidently prepared with the greatest care and may be regarded as a valuable milk derivative of an easily assimilable kind in accordance with physiological inquiry. Sanose may obviously be added to other foods with advantage. We have also examined Sanose biscuits. They are crisp and of good flavour, but rather sweet. Sanose biscuits will be valuable in the event of a specially rich nitrogenous food being indicated.

TURTLE SOUP.
(V. BENOIST, 36, PICCADILLY, W.)

The turtle is said to combine the nutritive properties and qualities of fish, flesh, and fowl, and doubtless the soup is a powerful nutrient because its gelatinous contents are easy of digestion and therefore of assimilation. Two preparations have been submitted to us by Mr. Benoist: (1) a soup containing pieces of turtle, and (2) a consommé (clear). We found that both preparations were free from preservatives and on further examination the results were quite satisfactory. The soup evinced an excellent and delicate flavour, due in a large measure to the fact that the turtles are specially selected and killed for the purpose. The fresh soup can be supplied at any time, arrangements having been specially made with this end in view.

SPECIAL BRANDIES ("GRANDE FINE CHAMPAGNE").
(B. LEON CROIZET, ST. MÊME, COGNAC. AGENTS, COSSART, GORDON AND CO., 75, MARK-LANE, E.C.)

We have examined four types of the brandies shipped by the above "viticulteur" (Croizet, Cognac) and the following are the results:—Cognac (one star): alcohol by weight 38·50 per cent., by volume 45·71 per cent., equal to proof spirit 80·11 per cent.; extractives, 1·26 per cent.; mineral matter, 0·11 per cent., acidity reckoned as acetic acid, 0·32 per cent.; alcohol in volatile ethers, 0·06 per litre. Cognac (two star): alcohol by weight 39·30 per cent., by volume 46·59 per cent., equal to proof spirit 81·64 per cent.; mineral matter, *nil;* extractives, 1·29 per cent.; acidity reckoned as acetic acid, 0·032 per cent.; alcohol in volatile ethers, 0·064 per litre. Cognac (three star): alcohol by weight 38·78 per cent., by volume 46·02 per cent., equal to proof spirit 80·64 per cent.; extractives, 1·58 per cent.; mineral matter, *nil;* acidity reckoned as acetic acid, 0·038 per cent.; alcohol in volatile ethers, 0·082 per litre. Cognac (V.S.O.P.): alcohol by weight 38·78 per cent., by volume 46·02 per cent., equal to proof spirit 80·64 per cent.; extractives, 1·58 per cent.; mineral matter, *nil;* acidity reckoned as acetic acid, 0·038 per cent.; alcohol in volatile ethers, 0·152 per litre. The interesting feature in these results is the increasing amount of volatile ethers *pari passu* with, as we think, the age of the spirit. The last on the list, V.S.O.P., is a pure mellow spirit with an unquestionable history. It is a well-matured grape spirit, smooth to the taste and possessing a fragrant ethereal aroma characteristic of real Cognac. In regard to alcoholic strength there was very little difference between the samples examined. Of extractives the V.S.O.P. contained the highest proportion—a fact which corroborates the opinion that it is the oldest and longest matured specimen. The other samples were good and genuine and free from rawness or crudity of character. For medicinal purposes only that spirit presenting such satisfactory characteristics should be employed.

OATMEAL COCOA.
(THE "SERVUS" CO., 65 AND 66, BASINGHALL-STREET, E.C.)

From the dietetic point of view we are inclined to regard the addition of oatmeal in a special way to cocoa as a suitable and satisfactory expedient, since the oatmeal supplies what cocoa lacks and *vice versâ*. Cocoa, for example, is essentially, though not exclusively, a stimulant on account of the presence of definite alkaloids. Oatmeal, on the other hand, contains no stimulating principle but is highly nutritive, not only on account of its richness in nitrogenous constituents but also by reason of the excellent proportion of carbohydrates, fat, and mineral matters which it contains. The preparation before us consists of pure cocoa with no admixture of any kind except that of specially-selected oatmeal. The mineral matter amounted to 5 per cent. and gave abundant evidence of the presence of phosphates, derived in great measure from the oatmeal. In accordance with the indications of analysis the preparation should possess a peculiar food value, not belonging to the constituents separately but embodied in the combination described.

TROPON.
(THE TROPON AGENCY, 2, FOWKES-BUILDINGS, E.C.)

Tropon is a form of albumin and albumin is regarded by physiologists as being able alone to support the vital processes and the only alimentary substance which can do so. Albumin, however, is not suitable for administration alone, since probably in excessive quantities it would escape assimilation and lead to waste. It is therefore best presented as an alimentary substance diluted, so to speak, with carbohydrates and fat. Tropon is a brittle brown powder which on analysis gives the following results: albumin, 88·04 per cent.; moisture, 10·66 per cent.; mineral matter, 1·3 per cent. Calculating on the proportion of nitrogen which it contains it should prove the cheapest food possible, but it should be borne in mind that the actual value of foods is a question not only of chemistry but more particularly of physiology. The price of tropon is two shillings per pound. It is practically tasteless and almost insoluble in cold water. On preparing a solution in boiling water and cooling the resulting liquid it was found readily to dissolve under the digestive action of pepsin extract.

(1) SPECIAL INVALID PORT; AND (2) OLD LIQUEUR WHISKY
(J. KEITH, 84 AND 86, CADZOW-STREET, HAMILTON, N.B.)

The sample of port wine gave on analysis the following results: extractives, 8·65 per cent.; sugar, 6·25 per cent.; mineral matter, 0·18 per cent.; alcohol, by weight 18·54 per cent., by volume 22·73 per cent., proof spirit 39·84 per cent. The wine was of excellent character, having a pleasant fruity taste and aroma. It is a genuine and generous wine well adapted for use by invalids. It is derived from the 1884 and 1888 vintages and has therefore matured for over ten years. The wine certainly possesses quality and is moderately priced at 36*s*. The whisky gave the following results on analysis: alcohol, by weight 40·90 per cent., by volume 48·32 per cent., equal to proof spirit

94 68 per cent.; extractives, 0·36 per cent.; and acidity reckoned as acetic acid, 0·03 per cent. The whisky is said to have been kept in bond from ten to thirteen years and its character in regard especially to taste and aroma is quite consistent with this statement. It is a thoroughly matured spirit and free from any suggestion of the presence of the more complex and harmful alcohols. From the complete results of our examination we believe the spirit to be derived only from malt and which is subsequently matured by storage.

BONNIE BABY FOOD.

(MOSELEY AND CO., HERLEY MILL, SHEFFIELD.)

On examination this proved to be a highly cooked cereal food yielding a large proportion of soluble carbohydrates on treatment with cold water. Its composition does not call for any particular remark except that in the course of preparation it is rendered more soluble and more digestible. Under the microscope the cereal selected was plainly indicated. The mineral contents are somewhat low, amounting to 0·77 per cent.

TABLE JELLIES.

(S. CHIVERS AND SONS, HISTON, CAMBRIDGE.)

The convenience of being able to prepare jellies quickly from slabs of pure prepared gelatin is obvious. What is now a matter of a few minutes in culinary preparations was at one time a matter of hours. We have examined the specimens of table jellies before us both practically and analytically. Following the directions given an excellent jelly is quickly obtained possessing a flavour of a quite natural character. The composition of the preparations was obvious on analysis. A small proportion of mineral matter was yielded on complete incineration of the specimens. The residue consisted of phosphates. We could find no objectionable ingredients in the composition of the jellies, the materials, inclusive of colouring and flavouring agents, being free from reproach.

New Inventions.

A PULLEY FOR CASES OF EXTENSION.

I HAVE devised a pulley, shown in the accompanying illustration, for making weight extension on children lying in cots in cases of hip disease, fractured femur, osteotomy, &c. The pulley is suspended by a chain attached to the hook on it and passing over the top bar of the foot of the cot. In this way the height can be exactly adjusted. The transverse

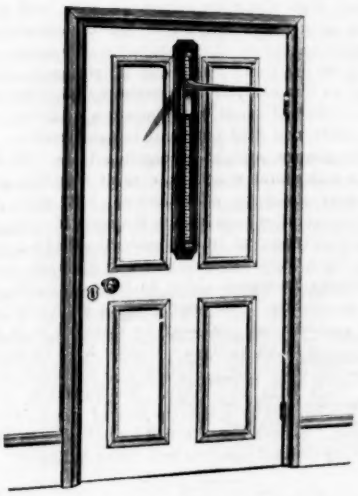
rod on which the pulley revolves rests against two adjacent vertical bars of the cot and is kept very steady when the weight is hung on the cord passing over the pulley. I find the pulley simple and easily adjusted; there are no screws or other parts about it which can possibly get out of order. Several of them are in constant use here and they prove satisfactory. The pulley has been made for me by Messrs. Down Brothers of London.

A. J. RODOCANACHI, M.D. Lond.

District Infirmary, Ashton-under-Lyne.

A NEW APPARATUS FOR MEASURING THE HEIGHT OF PATIENTS.

THE accompanying illustration represents a new apparatus for measuring the height of patients, introduced by Messrs. Maw, Son, and Thompson of Aldersgate-street, and already described in THE LANCET of April 23rd (p. 1125). The horizontal bar which rests on the person's head indicates his height on a scale of feet and inches attached to a polished



walnut-wood panel about 3 ft. 6 in. in length. This panel may be fastened by screws or otherwise to the consulting room door, as shown in the illustration. The vertical rod on which the horizontal bar slides is mounted on revolving brackets, so that the bar when not in use may be turned to one side out of the way flat against the door. The heights which may be measured extend from 4 ft. to 7 ft. The price is one guinea.

A POCKET MEDICINE CASE.

MESSRS. JOHN BELL AND CO. of Oxford-street send us a specimen of a small medicine case which they are supplying for the use of patients travelling under the orders of a medical man and who are out of reach of ordinary sources of drug supply. The cases are made of white metal, and they contain five metal-capped bottles of tablets and measure about 4 in. by 3½ in. The sample before us is fitted with phenacetin, diarrhœa, antibilious, quinine, and antacid tablets. The bottles, however, can be filled with drugs according to the selection of any medical man.

DENTAL HOSPITAL OF LONDON, LEICESTER-SQUARE.—A donation of £250 has been contributed to this hospital by the trustees of Smith's (Kensington estate) charity.

BRISTOL BOARD OF GUARDIANS.—At the meeting of the Bristol Board of Guardians held on June 10th it was decided to increase the nursing staff at the Stapleton Workhouse. This will give each day nurse 30 patients and each night nurse 90 patients; at present each nurse is responsible for nearly double this number of cases.—At the same meeting Mr. George Metcalfe, M.D., B.S. (Durham), L.R.C.P. Lond., M.R.C.S Eng., surgeon to the Newcastle Throat and Ear Hospital, was selected by the guardians for the new appointment as resident medical officer to the Eastville Workhouse. There were 39 candidates for the post. The salary is £250 per annum, with an allowance of £30 for a residence.

THE LANCET.

LONDON: SATURDAY, JUNE 18, 1898.

THE value of trustworthy vital statistics as an incentive to sanitary well-being and progress is now increasingly appreciated, and the necessity of approximately accurate estimates of population as a basis for these statistics is also fully recognised. Unfortunately, however, there are almost insuperable difficulties in satisfactorily estimating town populations in intercensal years under the present conditions of a decennial Census. As we are now again approaching the close of another Census decennium it is most desirable that this statistical difficulty should be fully and carefully considered by all those who have the sanitary progress of the country at heart, in order that measures may be taken when the next Census Act is passed to provide for a more frequent enumeration of town populations, at any rate, and for more trustworthy estimates of population in intercensal years. Towards the close of each Census decennium the Registrar-General is the object of more or less opprobrium on account of the obvious failure in a large number of cases of the hypothetical method of estimating populations on the assumption that the rate of increase observed between the last two censuses has been maintained since the last Census. It is easy to denounce this method as unsatisfactory, but it is not so easy to suggest one which would on the average give more trustworthy results without provision for more frequent enumerations of the population, which unfortunately the Registrar-General has no power to enact.

Fully recognising, as we do, the importance of this matter, we are glad to observe that Dr. HOPE, the medical officer of health of Liverpool, has devoted considerable attention to it in his report for 1897, although we do not entirely agree with him as to the conclusiveness of his arguments in support of the assertion that the present population of Liverpool is largely in excess of the Registrar-General's hypothetical estimate. The movement of population within the city of Liverpool is, however, full of statistical interest and is most usefully illustrative of the difficulties which the Registrar-General experiences in his necessary attempt to construct intercensal estimates of population, without which his calculation and publication of marriage-, birth-, and death-rates would necessarily have to be abandoned. The population enumerated within the area of the city of Liverpool previously to its recent extension increased from 82,295 in 1801 to 517,987 in 1891. The most rapid rate of increase within this area occurred in the two Census decennia 1821–31 and 1831–41, when it was respectively equal to 45·8 and 42·0 per cent.; the rate of increase steadily declined in subsequent decennia to 11·1 and 12·0 per cent. in 1861–71 and 1871–81, while between 1881 and 1891 the population actually declined by 6·2 per cent. This recorded decrease of population in Liverpool was, however, somewhat deceptive and was due to that centrifugal diffusion of population which is in operation in all large towns. The population of Liverpool did not really decline between 1881 and 1891, but a large portion of that population migrated outside the artificial municipal boundaries. The result of this change from an increase of 12 per cent. in 1871–81 to a decrease of 6 per cent. in 1881–91 was an over-estimate by the Registrar-General of the population of the city which at the end of the Census period amounted in round numbers to 100 000! It should, however, be stated that the Registrar-General, fully aware of the failure of the hypothetical method in this case, applied to the municipal authorities of the city for assistance in the revision of his estimate, suggesting that he should be furnished with a return showing the number of inhabited houses on the rate-books of the city in 1881 and in 1886, in order that an estimate of population based upon the number of inhabited houses might be substituted for that estimated upon the hypothesis of a constant rate of increase during twenty years. The town council of Liverpool did not respond, however, to this suggestion and the Registrar-General's estimate of population could not therefore be amended. Now, however, the medical officer of health and the town council consider that the Registrar-General's hypothesis understates the present population of Liverpool and desire a revision of the estimate, and it will be useful to consider the trustworthiness of the grounds on which this conclusion is based, and also what means exist for the calculation of a more approximate estimate.

We have referred to the fact that the enumerated population of Liverpool city showed an actual decline of 34,521 between 1881 and 1891; the boundaries of the city were, however, extended in 1894 and within the extended area the enumerated population, instead of declining, showed an increase of 5608, or rather less than 1 per cent., during the intercensal period 1881–91. Thus, even in Greater Liverpool the population was practically stationary during these ten years, but Dr. HOPE advises his sanitary authority that a far more rapid rate of increase of population has set in since 1891. It will be well to refer to some of the grounds on which Dr. HOPE bases his assertion that the present population of the city is under-estimated and that "the growth of the city from this cause (house-building) appears to be as rapid as that of the other great cities." A table is given in Dr. HOPE'S report which shows the *estimated* number of houses in Greater Liverpool in each of the seven years 1891–97. Without discussing the varied forms of estimate adopted in different parts of the city for the purpose of this table, we may point out that if we accept these estimates as approximately accurate and assume that the population of the city has increased at the same rate as the houses, the estimate of population for the middle of 1897 would, it is true, be somewhat raised, but so slightly raised as to reduce the calculated birth- and death-rates by only one-eightieth part. In fact, this table of estimated total houses suggests no serious error in the Registrar-General's estimate. Then it is stated, on the evidence of a return made by the city police, that the number of "unoccupied" houses, which was recorded at the Census in 1891 as 17,399, does not now exceed 5327. It is clear that if 12,000 houses

in Liverpool which were uninhabited in 1891 are each now inhabited by an average of 5·7 persons, which was the average at the last Census, this would signify an increase of between 60,000 and 70,000 to the population. Such a change, however, is simply incredible, and the fallacy is probably due to the different interpretation of the term "unoccupied" house by the Census and police enumerators respectively. The Census term is "uninhabited," and under this heading are classed all houses in which no person slept on the Census night, and thus necessarily are included a very large number of "occupied" and duly rated houses. Now it would be absolutely impossible for a policeman on his beat to decide accurately by outside inspection whether a house had or had not anyone sleeping in it on any given night. Any comparison of this police return of "unoccupied houses" with the Census return of "uninhabited house" must therefore necessarily yield fallacious results which would not be eliminated by Dr. HOPE'S assertion that the Census return is as liable to error as the police return, the point being that the basis of the two inquiries appears to have been radically different. Dr. HOPE'S third point is that the calculated birth-rate in Liverpool is higher than that of any other city of the United Kingdom at all approaching it in size, and therefore suggests an under-estimate of population. He sees no reason why the birth-rate of Liverpool should be higher, for example, than the birth-rate in London, Birmingham, Bristol, or Leeds, and adds, "most likely it is not." Dr. HOPE appears to have lost sight of the fact that this excess in the Liverpool birth-rate is nothing new and that it has been maintained during a long series of years, as is shown in a table in his recent report. It may be noted that the birth-rate in the old city during the three years 1890–91–92, taking the Census year as the middle of the period, was equal to 34·4 per 1000, and the rate in 1897 in Greater Liverpool, calculated on the estimate of which Dr. HOPE complains, is 34·6, which scarcely supports the assertion of the inaccuracy of the official estimate. Lastly, it is pointed out that the excess of births over deaths in Liverpool since the last Census in 1891 amounts to about 39,000, or nearly 6000 per annum, while on the basis of the rate of increase between 1881 and 1891 the Registrar-General assumes that the annual increase of the population of Greater Liverpool does not exceed 600. It should, however, be remembered that between 1881 and 1891 the recorded births in the old city of Liverpool exceeded the recorded deaths by more than 50,000, whereas the enumerated population of the city showed an actual decline of 34,500, signifying that during the ten years more than 80,000 persons overflowed the artificial boundaries of the city. Greater Liverpool is probably far more self-contained than the old city, but every year the workers in towns, under the influence of improving and cheapened travelling facilities, live farther afield, and Dr. HOPE would hardly assert that there is not even now a considerable migration of Liverpool residents beyond its extended boundaries still in progress.

While we find ourselves unable to agree with Dr. HOPE that his statistics afford conclusive evidence that the present population of Liverpool is to any considerable extent under-estimated, we most entirely endorse his claim of urgency for a quinquennial Census, at any rate in all large towns. Liverpool statistics were, it is true, seriously vitiated during the last half of the intercensal period 1881–91 by a fallacious estimate of its population, but Dr. HOPE seems disposed to exaggerate the probable error of estimate at the present time. London, through what is a political accident, now has the advantage of a quinquennial Census combined with a statutory annual return of inhabited houses on the local rate-books made upon an increasingly uniform basis. The sanitary authorities of all large towns should bring combined Parliamentary influence to bear upon the Government to secure the extension of this advantage to other urban districts when the Census Bill for 1901 is under discussion. This is a matter of most serious import to the health-progress of the nation.

UNDER the heading "Public Schools and Food" there appeared a year or two ago in a weekly journal (now extinct) a somewhat severe indictment of the manner in which boys are fed at many of the English public schools. The article, as was to be expected, drew forth more than one strong disclaimer from public school-masters, but our own view is that there was a good deal of ground for the strictures it contained. No one can deny that in many directions our public schools have improved enormously during the past twenty years. The brutalities of the old *régime* have largely passed away, and, indeed, there are some people who fear that there is a danger of our falling into the opposite extreme and of tempering the wind somewhat indiscreetly to lambs that are not shorn. Still, the move was in the right direction. Again, in all matters connected with sanitation the great advance which has been made throughout England during this generation has left its mark even upon such conservative institutions as our great schools. In the planning of new buildings more consideration is paid to matters of health, while old buildings have in many cases been largely remodelled internally so as to bring them more into accord with what is now considered desirable. This is all as it should be and we are glad to be able to admit that our great public schools have done their duty in these respects. It is somewhat remarkable, then, that while so many important improvements have been carried out the system on which public school boys are fed remains in many important respects almost barbarous.

The "tuck-shop" and the "hamper" remain a source on which our sons while at school rely for their food, and the boy who, through the mistaken policy of his parents, finds himself cut off from these methods of supplementing his regular diet may suffer from insufficient nourishment. We are very far from saying that this is the case in all our public schools or even universally in any one of them. Much will depend upon the particular boarding-house in which a boy finds himself, and in some schools—not necessarily the most expensive schools, we may add—the general level among all the houses in this respect is higher than in others. But our view is decidedly that in certain of our great schools the food supplied to the boys is, if sufficient in quantity, often sadly lacking in nourishing quality, and we believe that most

old public school boys will agree with us on this point. And as long as the "tuck-shop" and the "hamper from home" may be relied upon to make up for any deficiencies in the fare provided it is hardly wonderful if house-masters at times do not pay sufficient attention to the food supplied to their pupils. The system, in fact, is a vicious one and until it is modified it is hard to see how any permanent improvement can be secured. It is curious that in this respect English private schools are, as a whole, considerably in advance of the great public schools. No doubt this is partly due to the fact that their numbers are more manageable. No public school head-master can be expected to keep a watchful eye upon the food supplied to 500 boys scattered through a score of boarding houses, whereas in a private school of 50 boys or less a single responsible head can easily control even these details. It is, perhaps, because of this that many private school-masters have taken the obvious step of forbidding all supplementary supplies of food from the boys' homes whatsoever, whereas at our public schools such a reform is, we believe, not yet dreamed of. A private school head-master realises that his income depends upon his pupils being properly fed as well as properly taught, whereas a public school head-master, with his multitude of pupils, some of whom he hardly knows by sight, is apt to have his attention engrossed with larger matters of administration and leaves his house-masters to feed their boarders as they please. The house-master, not being a professional caterer but merely an average University graduate with a large family, allows the "hamper" system to go on because it saves him trouble and money or because it does not occur to him to think about it one way or the other. And, indeed, he would be more than human if he set his face against a system which prevailed in all the houses round about him in the face of the opposition which would assuredly meet him from the unthinking youths whom he designed to benefit. But it may be urged that there is no particular harm in boys being supplied with food from home to supplement the ordinary school fare so long as the parents, who, after all, pay the school bills, do not protest; but this is a shallow view. In the first place, it takes no account of the boys—and there must always be some two or three in every house—whose parents are unable or unwilling to provide this supplementary food. And, far more important than this, there is the objection that this supplementary food is often of an unsatisfactory character from the point of view of nourishment and is necessarily a very imperfect substitute for a wholesome regimen properly thought out by the house-master and his housekeeper and regularly supplied. The biscuits of Reading and the jam and potted meat of the Charing-cross-road, though excellent in their way, do not represent the last word that may be said on hygienic feeding for growing boys, and even plum cake, the *pièce de résistance* of hampers, makes a poor substitute for dinner. And, unhappily, such is the nature of youth, the plum cake is apt to be eaten and the dinner left so long as the hamper lasts out, even though little serious fault might be found with the dinner by a reasonably hungry adult.

The great fault of the "hamper" system is that it tends to relieve school-masters of the necessity of providing sufficient nourishing and palatable food for their pupils. And there is really no reason, judging by the scale of fees at public schools, why they should be so relieved. Nor, indeed, judging from these, is there any fair reason why the eternal bread-and-butter of the public school tea-table should not be supplemented on certain days of the week with the jam or the cake to which schoolboys are so devoted. The extra expense to the house-master would be small. Boys only indulge to excess in these dainties because they so seldom have a chance of indulging in them at all. But if this be a counsel of perfection it should at least be possible for masters to make sure that the bread-and-butter itself is of good quality and not unpalatable. We are under the impression that this is not always the case. It is possible to support life on bread-and-butter at breakfast and at tea even for growing youths provided the bread and the butter are good.

AT a time such as the present, when with the advent of summer vegetation is bursting forth and clothing the earth with its rich green mantle, there is a temptation to speculate as to what may be happening in nature to those minute forms of vegetable life which are so intimately associated with certain diseases; to wonder whether they, too, like the vegetation which we see around us, are undergoing growth and development in their natural habitats, wherever these may be. What the behaviour outside the animal body of these micro-organisms may be at any given time is a question which we are not in a position to answer. Our knowledge as to these matters is but slight and we can for the most part only guess at what has been the activity of any given micro-organisms by the effect which at any given time of the year they manifest upon the human species. If, however, we accept provisionally the seasonal mortality of certain diseases as an index of the activity in this country of those lowly forms of vegetable life with which the diseases in question are probably associated, we find ourselves, after an examination of the seasonal curves of disease mortality, guided to the conclusion that there is but little evidence to support a view that the summer growth of vegetation as it manifests itself to us is accompanied by any great multiplication on the part of pathogenic micro-organisms. Indeed, if for the moment we may measure by mortality the seasonal prevalence in London of such diseases as small-pox, whooping-cough, enteric fever, diphtheria, scarlet fever, and measles, we shall find that it is only in the two last-named that there is at the present time any sign of increased activity.

Are we, however, justified in assuming that enhanced reproductiveness of micro-organisms is the only factor concerned with seasonal prevalence of disease? and are we not bound to take into consideration questions of increased power of receptivity or of diminished resistance on the part of the human host? As to these powers of receptivity or resistance apart from questions of acquired immunity and of the age distribution of any given disease we know but little, and it may be that we shall in the future have to unlearn something of that which we think we already know. The popular and very commonly accepted opinion that a person in a low state of general health is more likely to contract infection than is one in robust health can hardly be held to rest upon a very sure foundation, although there are certain

experiments which would seem to point in that direction. There is, too, probably but little doubt that the reception of the virus of enteric fever or of diphtheria is more likely in presence of a disturbed condition of the intestinal or faucial walls than in those in whom these structures are quite sound; but, on the other hand, due consideration must be given to instances, sufficiently numerous, where persons, after a long holiday and apparently in the best of health, fall victims to conditions which they resisted successfully when much run down. Unfortunately the sciences of meteorology and bacteriology cannot be said to assist us very much in our endeavours to explain the seasonal prevalence of disease. Major H. E. RAWSON has lately shown, as described in our columns,[1] that the anticyclonic systems of the atmosphere over Europe regularly undergo entensive changes of position according to the time of year, but the statistics of disease incidence do not appear to exhibit corresponding variations. The teachings of BUCHAN and MITCHELL as well as of others have clearly demonstrated the fact that the mortality from certain diseases varies more or less markedly with seasonal changes, and we know, too, how, apart from actual changes in the seasons, excessive cold, heat, or dampness may augment the mortality in certain directions. Still, from the standpoint of meteorology we are as yet little beyond the threshold, and bacteriology cannot be held to have cast much light upon this question of disease prevalence. In this latter connexion, however, reference has to be made to certain experiments conducted last year by Dr. JOHN ROBERTSON, the present medical officer of health of Sheffield. They are of considerable interest partly by virtue of the fact that they were conducted under conditions which were as far as possible natural, and partly because the results of the experiments were valuable in themselves and suggest lines for future workers in the same subjects. Three patches of soil situated in a field near St. Helen's were sown with dilute broth culture of enteric fever organisms and the growth of the organisms was carefully observed from time to time. It was found that during June, July, and August, while the weather was dry and there was abundant sunshine, the organisms grew and flourished, and similarly during September and October, when the weather was wet and dull, the organisms were plentiful. In November, however, they began rapidly to diminish and by the 20th of that month their presence was not detectable. These very interesting experiments point so far as they go to the probability that the prevalence of enteric fever in this country may be preceded and partly accompanied by an active multiplication of the bacillus in the soil. There is, of course, need that the experiments should be repeated and confirmed by other observers, but the results so far obtained would seem to be in accordance with reasonable expectations. They are, too, somewhat parallel to the provisional conclusions at which the late Dr. BALLARD arrived as the result of his historical researches into the behaviour of autumnal diarrhœa. Indeed, these two diseases—enteric fever and diarrhœa—may well be studied in conjunction with one another, more especially as it seems in the highest degree probable that at certain times prevalence of both these diseases may be due to the growth in the soil of the organisms which may be held to be peculiar to each. With regard, however, to diarrhœa and to such diseases as have not yet been definitely established to be due to any specific organism the outlook from an experimental standpoint is less favourable than is the case with enteric fever; and furthermore, when a new specific organism is discovered and isolated we have still to find the medium in which it will flourish in a condition akin to that which obtains in nature. In the meantime we may doubtless learn much by a continued study of such diseases as enteric fever, cholera, and diphtheria.

[1] THE LANCET, May 14th, 1898, p. 1340.

Annotations.

"Ne quid nimis."

HOSPITAL HERESIES IN BIRMINGHAM.

A YEAR or so ago we commented on some remarkable views which prevail among the workmen of Birmingham and which have their origin in the substantial contributions which they make towards the support of the hospitals. These contributions are supposed to be voluntary, but, according to a speaker in a recent discussion on the subject by the Trades Council, "in many of the factories and workshops the subscriptions are not made voluntarily but are stopped out of the wages." This is not satisfactory—such gifts should be entirely voluntary. We are, it is to be hoped, a long way off the municipalisation of hospitals. Meantime let us preserve the hospitals from the gifts of all who do not give gracefully and willingly—we must not say charitably, for in the advanced views of Birmingham this word is taboo. The one and only thing which, according to the Scripture, is never to fail is to be dismissed in the city of Birmingham as something discredited, and when the proud workman of that place goes to the hospital to have a fracture set, or an obscure disease diagnosed, or a strangulated hernia dealt with, he is to go as one who has paid for all which can be done for him in the way of skill or comfort, the said payment consisting in the payment of a few shillings a year. The services which we specially associate with a hospital, whether medical or nursing—to say nothing of boarding—are such as are to be adequately paid for only in large sums of money, in fees of anything up to a thousand guineas. We need not say that in these remarks we are meaning no disrespect to the substantial contributions of the workmen of Birmingham. We have no such feeling, but quite the contrary. What we are surprised at and disapprove is the theory that they claim the hospital treatment as a matter of right, and to exercise a predominant influence in the administration of the hospitals on the score of such donations. We do not believe that the honest unsophisticated workman of Birmingham or Leeds really holds any such absurd views or thinks that he has discharged a mere commercial debt when for such services he contributes a few shillings a year, not a farthing of which goes to the profession, to which perhaps he owes his life or limb or eye, or that of his wife or child. Such views are manufactured for him by others who ought to know better and who do know that the voluntary hospital system of this country has been created and maintained in the past chiefly by the wealth of those who have had no direct benefits from it and who only share the indirect benefits with the working classes, who practically monopolise the direct advantages. Let it be admitted that in Birmingham the case is altered

by the handsome contributions of the workmen. We agree that these entitle the contributors to a voice in the administration. But we deny that such contributions entitle them to alter the whole conception of the hospital system as essentially a charitable one, in which the chief workers are not paid. If such an alteration is to be made it must be with the consent of the medical profession whose work at present is practically gratuitous. Moreover, the portion of the profession which does hospital work is a mere fraction of the whole. The *doctrinaires* of Birmingham who lead or mislead the working men speak of the claim of working men who subscribe to hospitals and dispensaries to be attended in such institutions as *of right*, without reference to the nature of their diseases. The claim is absurd and would, if pushed, bring the hospitals to bankruptcy and those who use them into a sort of pauperism.

LONDON UNIVERSITY COMMISSION BILL.

THE promoters of the movement for the formation of a Teaching University in London are to be congratulated on having scored a distinct success on Tuesday last. The Bill for the appointment of a statutory Commission passed the second reading without a division, notwithstanding the opposition of Sir John Lubbock and some graduates of the University. The opposition to the Bill was of the most trifling nature and no new argument was brought forward, so after the speech of Mr. Haldane, who has taken a large amount of trouble in trying to settle the question, there was no doubt of the success of the Bill. It is to be hoped that it will quickly pass through the committee stage, so that the statutory Commission may soon get to work. London has waited long enough for a university which shall preside over its teaching and consolidate the various institutions engaged in higher education. The medical schools and the scientific colleges have greatly suffered from the want of resident teachers, who ought to have a distinct position in directing the studies of the pupils who desire to obtain degrees. Such a position is given to them in the Scotch and provincial universities, and such they will obtain under the present Bill if it becomes law. We cannot see why country graduates should decide on the needs of educational London and are pleased that the House of Commons has assessed the recent voting of Convocation in favour of Mr. Fletcher Moulton at its true value. The use of a veto by a slight majority vote of Convocation has been purely obstructive and the graduates will be deprived of this power in future as the members of the Universities of Oxford and Cambridge have already been deprived of it.

THE MEDICAL EXPERT AID COMMITTEE.

"THE individual withers and the world is more and more." Nothing can be done in these degenerate days without a society or at least a committee. The last new-fangled organisation is the Medical Expert Aid Committee. Strange to say there is only one medical name on this committee—that of Dr. Hugh Woods. The objects are (1) to enable persons of limited means to obtain expert medical advice; and (2) to discourage the abuse of hospitals. Let us confess at once great sympathy with the objects of the committee. No person, and especially no medical practitioner, can fail to be struck with the painful difficulty of getting expert opinions for those of modest circumstances, and especially of getting surgical work done for them, except at prohibitive prices which suggest or compel application to a hospital. The general practitioner has to accommodate his charges to the means of his patient. The fashionable or successful consultant probably does so to an extent which we do not know, but there is certainly a want of some arrangement or understanding upon which the general practitioner who first becomes cognisant of most of such cases could apply for a similar accommodation. It must also be remembered, to the credit of the consultant, that he spends an enormous number of hours in the hospital doing gratuitous work. Still there is room for a little more accommodation in fees to the humbler classes of patients. A private consultation at the consultant's house with the ordinary attendant present is a very different thing from the five minutes in the out-patient department of a hospital. We do not think with the committee that half-guinea fees should be introduced. But it would be sometimes an advantage if a consultation for a guinea could be procured easily where in the opinion of the medical attendant the patient could not afford more. We are well aware that some of our most eminent consultants are most kind in this way, but the rule of high fees has lately been such as to drive thousands to hospitals. Still, we are unwilling to admit that the intervention of a society or even a committee is needed for this purpose. The ventilation of the subject will suffice to remind our consultants of the number of persons who by a little accommodation on their part will be kept from losing their independence as private patients and drifting into a form of hospital pauperism. We give the committee every credit for their objects, but we are persuaded that these objects will be better attained by candid and friendly communications from general practitioners to their consulting brethren. We feel assured that our best consultants would hesitate to put themselves into the hands of practically a lay committee, while they will cheerfully coöperate with general practitioners for the objects set forth in the circular of the committee.

THE FEEBLE-MINDED.

PROVISION has been made in various directions for the different imbecile, idiot, and insane classes of the community and there are numerous organisations to help the weaker vessels of society who need the aid of charity. But until quite recently it was not adequately recognised that there exists a large class of feeble-minded persons who form not only a danger to themselves but to the community. These persons form what are known as "borderland" cases. They are not imbecile, they are not insane, yet they do not possess the necessary standard of intellect either to maintain themselves or to hold their own against others in the battle of life. When met with among the wealthier classes they are a constant source of anxiety to their friends and when met with, as they are so widely, amongst the lower classes they constitute a great source of pauperism, crime and immorality. Within the last few years public attention has been aroused to these facts and a Royal Commission was appointed a year or two ago to investigate the matter. Three years ago the National Association for Promoting the Welfare of the Feeble-minded was started, and this association has a strong and special claim on public support, not only for the benefit of the individuals concerned, but also with the view to eradicate the danger to the public welfare. Something has already been done for children of this description. Special classes have been formed for them in the London School Board, where instruction adapted to their standard of intellect is provided, and a few training homes for girls have been opened in various parts of England. It is when such children leave school and are expected to earn their own living that the great difficulty arises. They can only perform unskille work, and that slowly and badly, and for the most part they

need constant supervision. They can rarely earn enough to maintain themselves and their mental and moral weakness exposes them to many temptations. The boys become tramps and loafers, while the girls are constantly in and out of the workhouse. A meeting of the association referred to was held at Stafford House on June 10th, where the various facts which we have mentioned were discussed and proposals were moved by Lord Herschell, Sir James Crichton Browne, Sir Douglas Galton, Mrs. Garrett Anderson, Sir U. Kay-Shuttleworth, Mrs. Barnett, and others. In March, 1897, the association opened a home for girls at Shepherd's Bush, where they are received and taught house- and laundry-work, needlework, &c. The idea is to make them so happy and comfortable that it is not necessary to apply for special legal powers to forcibly detain them, and hitherto the efforts of the association have been rewarded with success at a very moderate expenditure. The cost is reckoned at 10*s.* a week—7*s.* supplied either by the guardians or by the friends and 3*s.* by the charitable public. In this way, as some of the speakers pointed out, a contribution of 3*s.* a week, or £8 a year, will maintain one individual. During the year the home has received several girls who appeared hopelessly incapable and yet who, under the combined mental and physical training of the home, have improved so much that there is good hope of their becoming useful, self-supporting members of society. Special provision is still required for girls who have fallen into vice by reason of their weakness of intellect rather than from vice. With the exception of a home near Birmingham there is no such refuge for girls. A home for boys has been instituted near Braintree, in Essex, where they are taught gardening, poultry-rearing, and basket-making. We are glad to find that this important question has become the object of organised effort and the association has our best wishes for its success. The office of the association, 49, Victoria-street, S.W., was opened in September, 1897, and some idea may be derived of the necessity of such an organisation from the fact that during the year ended March, 1898, 4610 letters and post-cards have been sent out and 287 applications for admission to the homes (176 women and girls and 111 men and boys) have been received and considered.

PAROXYSMAL HÆMOGLOBINURIA COMBINED WITH URTICARIA "A FRIGORE."

AT the meeting of the Société Médicale des Hôpitaux held on Feb. 18th M. Lucien Roques presented a very exceptional and interesting case. A man, aged thirty-three years, in good health, had suffered for three years from paroxysmal hæmoglobinuria. The attacks were always produced by exposure to cold, to which he was extremely susceptible. A momentary draught or merely getting out of bed would produce one. They were accompanied, especially when intense, by an icteric tint of the skin. The case showed a peculiar phenomenon which has not been previously described. If a portion of the skin was exposed to cold for a short time (a minute or half a minute was sufficient) by any means — for example, by the ether spray or by the application of ice or of a metallic body — a pruriginous urticarial wheal surrounded by a rosy band appeared in two or three minutes. It attained its maximum in four or five minutes and disappeared in ten or fifteen minutes, leaving a yellow patch of œdema which lasted for two hours. When the œdema passed away there still remained a yellowish tint which persisted for about twenty-four hours. The patient for some months had noticed occasionally that the parts of his body exposed to cold became swollen. Apart from this effect of cold dermographia could not be produced. M. Roques endeavoured without effect to produce the phenomenon in a number of cases of nervous diseases including hysterical and organic affections of which some presented already vaso-motor disorders. He also failed in several patients who were the subjects of dermographia. The existence of urticaria *a frigore* in a small number of cases of paroxysmal hæmoglobinuria has been described but not the phenomenon in question, which is in fact factitious urticaria *a frigore*. In THE LANCET of July 26th and Aug. 2nd, 1879, Dr. Stephen Mackenzie published the case of a child, aged four and a half years, the subject of paroxysmal hæmoglobinuria, who under the influence of cold was attacked with shivering, generally accompanied by an eruption of large patches of urticaria. Several writers have studied the relations of dermographia to cold. Mesnet found in one case that the application of ice hindered the appearance of the wheals, and Gull, Michelson, and Féré obtained similar results. The phenomenon described by M. Roques is therefore dissociated from ordinary dermographia. The yellow coloration of the wheals was evidently due to local transudation of hæmoglobin. The case, therefore, is evidence in favour of the view that paroxysmal hæmoglobinuria is due to the setting free of hæmoglobin in the blood-vessels—a direct effect, no doubt, of cold on the red corpuscles. The paroxysmal hæmoglobinuria arises from special susceptibility of the blood to cold and the urticaria from special susceptibility of the vaso-motor system. These susceptibilities appear to be independent and are only exceptionally combined in the same individual with the results described.

THE BATTLE OF ATBARA.

GENERAL RUSSELL recently put several questions to the Under-Secretary for War in the House of Commons regarding the hospital equipment and the medical and sick transport arrangements provided for the British brigade at the battle of Atbara. General Russell's series of questions covered a wide range, for he asked whether the medical department were not insufficiently supplied with anæsthetics for the performance of operations on that battle-field; whether the litters for the conveyance of the wounded were not unprovided with sunshades; whether no apparatus for the application of the Roentgen rays was carried with the army in the field; whether there were no light ambulances attached to the cavalry in Egypt; and, lastly, whether any complaints had been made of the hospital arrangements for the reception, accommodation, and nursing of the sick and wounded officers at Cairo after the campaign. Mr. Brodrick's replies to these questions were, on the whole, satisfactory. He was able to confute the statement regarding the insufficiency of anæsthetics, to show that the nursing staff was ample and that the War Office had received no suggestion whatever of any inattention in this respect, that the hospital wards at the Citadel Hospital, Cairo (as everybody who has seen them must admit), are large and lofty and afford ample cubic space and superficial area, and that every attention was paid to the wounded after the recent action. There were no British cavalry employed at the reconnaissance referred to by General Russell and the arrangements for the cavalry who were present rested with the Sirdar. Mr. Brodrick admitted that the litters were unprovided with folding hoods as a protection from the sun and that steps have been taken to supply the defect. As regards the Roentgen ray apparatus, he pointed out the difficulties attending its adaptation to field service, but said that two sets of such apparatus had been sent to Egypt and would, as far as possible, be adapted for service in the field. He added, however, that the senior medical officer, after having gone very carefully over all the cases, was unable to trace any instance in which the apparatus would have been specially useful or that a single

life would have been spared by its use. We may say that we have heard no mention of any want of anæsthetics on the part of medical officers, which would have been the case had it been the fact. If it is intended to imply that there was any complaint regarding the medical services we may say that, on the contrary, everything we have heard was strongly in favour of the medical officers and of their hard and unremitting work. The only regret was that there were too few of them. Whether the authorities cut down the hospital and other equipment provided on the occasion to too great an extent we cannot say. It was alleged on some previous occasion that our Egyptian campaigns are conducted on a too severely economical scale, and we should have been glad if the Under Secretary for War had expressed himself more definitely in this respect. We are not among those who think that it is always practicable to provide for every single requirement or contingency on field service, but we do very emphatically hold that whatever is possible should be done and that if for financial or military reasons it is not done the responsibility should not rest with the medical branch of the service.

TWO INTERESTING DINNERS.

QUITE recently there have been held two interesting dinners in London—namely, the annual dinner of the Army Medical Staff and the annual dinner of the Indian Medical Service. Brief reports of the proceedings will be found in subsequent pages, from which it will be seen that in both departments great satisfaction was expressed at the promised reforms in the Army Medical Staff, it being generally believed that Lord Lansdowne has solved by his timely concession a problem which had puzzled and irritated many well-meaning people for a long time. Surgeon-Major-General Jameson, presiding over the dinner of the Army Medical Staff, tendered the thanks of the department, of which he is the Director-General, for the new warrant; while Sir Joseph Fayrer, presiding over the Indian medical officers, expressed the gratitude of that department for the promised changes which he said would in all probability extend to their service. Sir Joseph Fayrer used weighty words, which we have pleasure in printing for our readers' information, as he repudiated the idea that the army medical officer wants to ignore his own duties and interfere with those of other departments in seeking to obtain unquestioned and unquestionable military rank. By the way, if any man's words should have practical weight upon such a point, Sir Joseph Fayrer is that man, for he has served in the Medical Services of the Navy and Army, as well as that of India, with which his name is so intimately associated.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION.

THE members of the Poor-law Medical Officers' Association and guests lunched together at the Trocadero Restaurant on June 14th. The chair was taken by Dr. R. Farquharson, M.P., who has recently been elected President of the association. After luncheon the honorary secretary, Mr. Arthur Greenwood, read the report of the work of the past year, in which were mentioned numerous instances of the oppressive manner in which some Poor-law medical officers are treated and of the benefit resulting in many of these cases from the action of the association. In one instance a board of guardians had compelled their medical officer to agree to make no claim under the superannuation scheme, but the association brought the matter before the Local Government Board, who informed the guardians that no such agreement with their medical officer would be binding. The treasurer, Dr. Gayton, said that at present the association had £54 in hand. Mr. Balding (of Royston), the chairman of the council, said that it would be difficult to over-estimate the value of the association, for the cases of oppression of the medical officers by boards of guardians were very numerous and very important. Dr. Farquharson said he would be most happy to assist by his influence in Parliament all the endeavours of the association to obtain a better status for the Poor-law medical officer. Several other speakers pointed out the very urgent need of reform which exists in many matters connected with the medical aspect of the administration of the Poor-law, and it was urged that much good might be done by working in union with the Poor-Law Officers' Association. The Shamrock Quartette gave a very agreeable selection of music during the luncheon.

THE NEW FELLOWS OF THE ROYAL SOCIETY.

TWO members of the medical profession—Dr. William Osler and Dr. Edward Waymouth Reid—have become Fellows of the Royal Society at the recent elections and we tender our congratulations to them. Dr. Osler, Professor of Medicine at Baltimore and physician to the Johns Hopkins Hospital, is no less known for his valuable practical researches in cardiac pathology than for his excellent and popular treatise on medicine. Dr. Reid, Professor of Physiology at University College, Dundee, has done much suggestive original work in all branches of physiology.

THE SEPTIC TANK SYSTEM OF SEWAGE TREATMENT.

THE steps now being taken at Exeter mark an epoch in the history of dealing with sewage. We understand that the Local Government Board have signified their sanction to a loan for carrying out the septic tank system on a scale applying to the whole of the sewage of the city. The system now passes, therefore, from the experimental to the practical stage and the progress of the undertaking will be watched with the greatest interest by all who are anxious for sanitary progress. Should success attend the scheme thus applied on a large scale—and judging from what has already been achieved there is no reason for anticipating any contrary result—a very striking instance will be afforded of the great value of studying nature's methods of purification. Indeed, the treatment of sewage is rapidly passing from the domain of chemistry to that of biology and it is probable that precipitation processes and other chemical methods will be relinquished ere long in favour of natural processes. Natural oxidation and precipitation by bacterial agencies is a gigantic phenomenon of everyday occurrence and it is only by a careful study into the conditions under which countless and ubiquitous micro-organisms will favourably work that such a satisfactory solution of a long vexed problem has been brought within measurable distance of attainment.

BACTERIOLOGICAL LABORATORIES AND THE PLAGUE.

WHEN the recent outbreak of plague occurred at Calcutta it was a matter of obvious importance that the exact nature of the disease should be determined with the least practicable delay. Happily for the Government of Bengal the services of M. Haffkine were available and he was able to report, as the result of a bacteriological examination, that the outbreak was due to true bubonic plague. We have heard a great deal about the establishment of bacteriological institutes or laboratories in India; now here was an occasion in which a bacteriological laboratory in Bengal would have been of the greatest use, and we are glad to notice that the *Englishman* of Calcutta has called attention to the subject. It cannot be said that among the number of medical officers of the Indian Medical Service there are not several who are both competent and willing to undertake this special work, and the sooner a

properly equipped institution is established the better. There is probably no place in the world where bacteriological researches are more required to be employed in the investigation of disease-causes than in India, not only in the interest of scientific medicine, but as a matter of State policy. A really good staff of men with the requisite scientific training should be specially selected for the purpose of conducting these inquiries, and as they will probably find ample work in carrying on their investigations their duties should be confined to them. The Government of Bengal recommended the adoption of inoculation with M. Haffkine's prophylactic virus as a voluntary preventive measure and held out as an inducement to people to undergo it that they and their families would be exempted from the liability to segregation. The statistical results of inoculation, whilst they cannot be accepted as conclusive, are favourable and promising, but the subject is one of much difficulty and a good deal has still to be done before the practical value of the inoculations can be regarded as established.

THE VACCINATION BILL.

As will be seen by our report in another column the Vaccination Bill is progressing well in grand committee. Mr. Carlile proposed to make the period within which children should be vaccinated six months from birth instead of twelve months, this amendment being recommended by the British Medical Association and the Jenner Society. Sir Walter Foster and Sir William Priestley supported the amendment, which was agreed to. The honorary secretary of the Jenner Society, Dr. F. T. Bond, has placed in our hands a copy of the amendments which the committee of the society are suggesting for the consideration of the grand committee. They are sixteen in number and all sensible, dealing for the most part with points in the Bill which have elicited expressions of dissatisfaction in well-informed quarters. The first is the one that has already been accepted. But the proposal contained in the fourteenth amendment is quite new to us and is a particularly wise one. The amendment runs as follows:—

New Section.—"Any local authority may incur reasonable expense in the diffusion of information as to the reasons why vaccination of children is required by the State and of literature generally illustrative of the advantage of vaccination."

There is no doubt that if the Government or sanitary authorities in any quantity had thought it worth while to show one tithe of the literary activity which has been displayed by the opponents of vaccination the anti-vaccination agitation would never have attained to its present height. It would be an excellent thing if parents who can now read in the lay press all sorts of so-called reasons why they should dread vaccination for their children could have easy access to the arguments showing the great advantage which accrues from the protective process.

OBLITERATIVE PERICARDITIS A CAUSE OF HEPATIC ENLARGEMENT AND ASCITES.

OBLITERATIVE pericarditis is not generally known as a cause of enlarged liver and ascites. As the symptoms of the former are not definite and the patient only comes under treatment for the latter a diagnosis of hepatic cirrhosis is made and the primary disease is only recognised at the necropsy. In the *Boston Medical and Surgical Journal* of May 19th, 1898, Dr. R. C. Cabot has published the following case. An emaciated boy, aged eighteen years, was admitted to hospital. Six years ago his liver was said to be enlarged, and four years ago he noticed swelling of his abdomen. Occasionally the feet have been swollen. The liver was much enlarged and reached from the fourth rib to a hand's breadth below the navel; it was apparently smooth and its edge was easily felt. There were considerable ascites and effusion in the left pleura. The heart did not appear to be displaced. The apex sounds were loudest in the fourth space. There was constant orthopnœa. The abdomen was tapped three times and the chest once. About four quarts were obtained each time from the former cavity and two from the latter. There was never any pain. The patient died at the end of eight weeks from pulmonary œdema and exhaustion. A necropsy showed complete obliteration of the pericardium by firm adhesions, the heart normal in size and the muscular substance not altered, the left lung retracted, airless, and covered with adhesions, the right lung compressed, much fluid in both pleuræ, and an enlarged nutmeg liver. The diagnosis of these cases, as stated, is difficult. In every case of obscure hepatic enlargement, especially in young persons, the heart should be examined for evidence of pericarditis. As the pericarditis is mostly tuberculous, evidence of tuberculosis in other parts will be of some value.

A GREAT MASONIC MEETING.

So many members of the medical profession are Freemasons (indeed, there are, we imagine, very few "lodges" which do not include at least one medical practitioner in the lists of their members) and the association of the profession with Freemasonry has from the earliest times been so close[1] that we think the very remarkable meeting which was held at the Albert Hall on Friday evening, June 10th, should not pass unrecorded in the columns of THE LANCET. The occasion was the centenary festival of the Royal Masonic Institution for Boys and the chair was occupied by a distinguished (if purely honorary) Fellow of the Royal College of Physicians of London—H.R.H. the Prince of Wales, Grand Master of English Freemasons. The institution was founded in 1798, under the name of the "Institution for Clothing and Educating the Sons of Indigent Freemasons," by the United Mariners' Lodge, and in 1817 a similar institution, established by Surgeon (afterwards Sir) F. C. Daniel and other members of a lodge which is now known as the Royal Naval Lodge, was amalgamated with the original charity. From these beginnings gradually grew the Royal Masonic Institution for Boys which is now situated at Wood Green; it is, however, intended, as a memorial of the centenary of the institution, to erect new schools at Bushey, Herts, the requirements having outgrown the existing buildings at Wood Green. A suitable site has been purchased and it is expected that the work on the buildings will be commenced in the autumn. But for these purposes funds were needed. With the name of Freemasonry charity is, we believe, indissolubly linked and the Freemasons proved true to their name and their traditions. At the conclusion of the dinner it was announced by the Prince of Wales that the total realised by the stewards' lists and other contributions amounted to the noble sum of £134,000—a record collection. There were 3898 stewards, some 2500 of whom were present at the dinner, and together with the ladies who witnessed the scene from the galleries and others there must have been at least 5000 persons in the vast and splendid building, the spectacle presented being as brilliant as it was unusual.

THE REWARDS FOR PLAGUE WORK.

A propos of the rewards conferred by the German Government upon the members of the German Commission sent out to Bombay last year to investigate and report upon the plague—a duty which occupied them some three months in

[1] Vide "The Medical Profession and Freemasonry," THE LANCET, Jan. 28th, 1895.

that city—the *Times of India* calls attention to the dimensions of the work carried on at Bombay and to the untiring energy displayed by the Indian Medical Service and profession in connexion with the epidemic. What is to be the scale of recognition which the Government of India will apply to these medical workers in the plague campaign? Two members of the German Commission, Dr. Gaffky and Dr. Pfeiffer, have received an honorarium of 15,000 marks each and Dr. Stricker and Dr. Dieudonne 9000 marks each. The two first-named receive, in addition, the Order of the Red Eagle of the second class and the others the same Order of the third class. All this is quite as it should be. But now let us turn to the work carried on locally—in Bombay itself. Taking the second epidemic alone the *Times of India* says in the case of the Arthur-road hospital (at which we may say, *en passant*, that Dr. Choksey did very hard and excellent work) that in the nine months ending March 31st over 4000 patients have been treated there, nearly half of whom were plague patients, and of the remainder over 900 were cases of relapsing fever and over 200 cases of cholera, while another 900 were cases of general disease. From October, 1896, to date nearly 3400 plague cases have been treated in this hospital, besides over 1100 cases of relapsing fever. The great plague hospital at Poona, managed in the first instance by Surgeon-Major Barry and in the second epidemic by Surgeon-Captain Lloyd Jones, comes nearest to this in the magnitude of its operations and in the burden of the work thrown upon the officers in charge.

POISONOUS ICE-CREAM.

ICE-CREAM is still sold in the streets without apparently any sort of legislative control as to the wholesomeness of the stuff which has such a peculiar charm and powerful attraction for so many juveniles. And where the difficulty lies in ensuring the use of none but wholesome materials in the manufacture of ices we utterly fail to see. Practically the manufacture is confined to a squalid quarter near Hatton-garden, the manufacturers being mostly Italians. Surely this place could be daily inspected in regard to sanitary environment and a sharp look-out kept on the quality of the eggs, sugar, &c., without adding very seriously to the present duties of our health authorities. Then why not license the ice-cream man, who under the present *régime* may cause an immense amount of mischief, leaving disease and death in his train, and yet no satisfactory means of identifying him and tracing him to his probably filthy den. Twenty years ago we described in these columns how loathsome was the condition of the tenements occupied by ice-cream mongers, pollution of the frozen mixture with human excreta being ocularly demonstrated with hideous certainty. In spite of all this, illness and deaths are still reported, and it is not surprising that these are traceable not to any well-defined metallic poison, but to an obscure product derived most probably from a putrefactive process. The Home Secretary's attention should be given to the matter.

GOUTY PHLEBITIS IN THE SCROTAL REGION.

SINCE the publication of Sir James Paget's classica work gouty phlebitis in the lower extremities has been wel, known. But the unusual site of the disease in a case com municated recently to the Société Médicale des Hôpitaux by. Dr. Le Gendre rendered the diagnosis difficult and even erroneous. A man, aged thirty years, was seized with violent pain at the root of the scrotum after having stood for many hours every day at the trial of M. Zola. The skin of the affected region was quite normal, but a flabby cord about 3 cm. or 4 cm. in length and mobile could be felt. The temperature was 100·7° F. The patient had previously exhibited gouty manifestations—nephritic colic, epistaxis, and arthritis of the great toe. His father and brother were gouty. The diagnosis of gouty phlebitis was therefore made and it was supposed that the long periods of standing, by favouring venous stasis, had helped to localise the attack in the venous system of the scrotum. A distinguished surgeon, however, diagnosed inflammation of Cowper's gland. The tumefaction became indolent and modified in shape; it formed an ovoid, hard mass about the size of a small almond, with an elongated pedicle, which became lost in the direction of the perineum. At this time another consultant diagnosed fibroma probably growing from the corpus cavernosum. At the end of twenty days the tumour commenced to diminish. An attack of gout in the right foot occurred one evening and the tumour rapidly disappeared, leaving a thickened varicose vein running towards the obturator foramen. Resolution was soon complete. Such rapid absorption does not occur in thrombosis with a well-formed clot; the exudation was therefore probably the result of periphlebitis.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

UP to yesterday (Thursday) at noon the subscriptions to the Metropolitan Hospital Sunday Fund amounted to £14,000. Among the principal contributions to this total may be instanced the collections made at St. Michael, Chester-square (£1258), at Christ Church, Lancaster-gate (£1367 4*s.*), and at All Saints, Ennismore-gardens (£480 2*s.* 4*d.*). The total on the corresponding date of last year was £17,000, but it will be remembered that Hospital Sunday last year was also the Sunday before the Jubilee, so that the churches were crowded.

AN ILL-MANNERED VESTRYMAN.

THE *South London Press* of May 28th contains a report of a heated discussion which took place at a full meeting of the Vestry of St. George's, Southwark, upon the condition of the crypt of St. George's Church. We do not intend, at any rate just now, to go into any details of a technical character concerning the analyses of the air of that church. Whatever the chairman of the vestry may think, decomposing corpses are not pleasant accessories to the furnishing of places of public resort. It is probable that the crypt will be cleared out soon, while it is certain that at some time or other, if not soon, the funds will have to be found to remove a source of danger to the worshippers at St. George's Church. But what calls for immediate attention is the behaviour at the meeting of Mr. Haynes, the chairman of the St. George's Vestry, if he is correctly reported in the *South London Press*. One gentleman, who had been for thirteen years churchwarden, was told by Mr. Haynes that his "sensational statements made for some motive or other were scandalous and dishonest," while to Dr. Waldo, the medical officer of health of St. George's, Mr. Haynes gave the lie direct. The latter incident is, we hope, without precedent in the records of local administration. It might be expected that the other members of the vestry would make Mr. Haynes feel that if he differs in opinion from the medical officer it is necessary that he should express his dissent in proper language and according to the decent methods which prevail among Englishmen in the conduct of their public affairs. But this expectation is doomed to disappointment. The *South London Press* of June 11th contains a report of another meeting of the vestry when the matter of the crypt came up for further discussion. At this meeting Mr. Haynes deliberately repeated his offensive conduct, justifying his words by some conversation which he said

that he had had with a third party (not present), and we are surprised to learn from the same source that his "statement was loudly cheered."

A SPECIAL meeting of the Council of the Charity Organisation Society will be held on Monday, June 20th, at 4.30 P.M., at the theatre of the Royal United Service Institution, Whitehall, S.W., when papers will be read by Mr. Clinton Dent on the Proposed Arrangements for Out-patients at the New Belgrave Hospital for Children, and by Mr. W. H. Kesteven on the General Practitioner and Out-patient Departments. The chair will be taken by Sir Joshua Fitch, LL.D., and members of the medical profession have been specially invited to take part in the discussion.

THE French Surgical Association will hold its twelfth Congress at the Faculty of Medicine, Paris, from Oct. 17th to 22nd. The subjects for discussion will include nephrotomy and the treatment of goitre (not exophthalmic). Intending readers of papers should communicate before Aug. 15th with the general secretary, M. Lucien Picqué, 3, Rue de l'Isly, Paris.

THE new physiological laboratories at University College, Liverpool, the magnificent gift to the College of the Rev. S. A. Thompson Yates, will be opened on Oct. 8th, Lord Lister performing the opening ceremony. It is stated that the Victoria University will take advantage of Lord Lister's visit to Liverpool to confer upon him the honorary degree of Doctor of Science.

WE learn from the Home Office that the report of the Petroleum Committee has not yet been presented for consideration by the members. So far the document drawn up by Mr. Jesse Collings is private and confidential and all statements which have appeared in the daily press about its contents "are purely speculative."

THE classification and rules for intending exhibitors at the Paris Exhibition of 1900, together with forms of application for space, can be obtained by applying to the Secretary of the Royal Commission, Paris Exhibition 1900, St. Stephen's House, Westminster, S.W.

THE Hospital Reform Association is making arrangements to hold a meeting in Edinburgh on Tuesday, July 26th, when the subject for discussion will be: The Hospital System in Scotland and Provident Dispensaries: their Use and Abuse.

SIR WILLIAM TURNER, President of the General Medical Council, received the honorary degree of LL.D. of Cambridge University on Wednesday last, in company with the President of the Royal Academy, the Master of the Rolls, Sir Henry Irving, and other distinguished persons.

HER MAJESTY THE QUEEN has forwarded a donation of 25 guineas to the Committee of the Royal Ear Hospital towards the fund now being raised for the new building. Her Majesty has been patron of this hospital since 1841.

THE Merchant Taylors' Company have contributed £1000 to the Prince of Wales's Hospital Fund and promise to repeat this amount for the next two years.

THE treasurer of St. Thomas's Hospital has received a donation of £1000 from "G. R." to endow a medical bed.

THE Freedom of the City of Edinburgh was conferred on Lord Lister and Lord Wolseley on Wednesday last.

THE BRITISH PHARMACOPŒIA.

V.[1]

THE ADDITIONS—(*continued*).

Salol.—As mentioned in our last article the value of this drug lies in its power of passing through the stomach unchanged. Owing to the acidity of the gastric contents, and upon coming into contact with the alkaline secretions pouring into the duodenum, it splits up into its constituents—phenol and salicylic acid. Ewald and Sievers utilised this substance in a most ingenious way for estimating the amount of time which the food takes in a given case to pass from the stomach to the small intestine. A long series of experiments demonstrated that the normal period for the splitting up of salol in the intestine amounted to from 47 to 75 minutes. The period was lengthened to 90 minutes after a meal of purely animal food washed down with acidulated water and it was shortened to 20 minutes by a meal of fruit, meat, and vegetables. These observers employed the drug as a test for the motor sufficiency of the stomach; as soon as the salol was split up its conversion product, *salicyluric* acid, began to appear in the urine. 15 gr. of the drug in cachet or capsule are administered during digestion and in normal conditions of the motor activity of the stomach the acid should be capable of detection in the urine in about one hour by the addition of neutral ferric chloride solution which strikes a violet colour. For all practical purposes at the bedside it is only necessary to dip a piece of white blotting paper into the renal secretion and upon this to let fall a drop of neutral ferric chloride solution when the margins of the drop or splash on the paper will at once show a violet tinge. In this way a fairly accurate idea may be obtained of the length of time required for the passage of food out of the stomach. Huber improved upon the method by determining the period at which the elimination of salicyluric acid was completed. In health the acid was all excreted in about twenty-four hours, but in dilatation of the stomach and in atony of the muscular coats the acid may be detected for thirty or forty hours after the administration of a single dose of 15 gr. of salol. In this way some idea may be also gained of the quality of the pancreatic secretion. In full doses the drug will reduce the temperature in fevers and numerous physicians have testified to its value in acute rheumatism, where its results have been favourably contrasted with those obtained by salicylates. In sciatica, various forms of neuralgia, and in migraine it sometimes succeeds when the new analgesics have failed. Recently it has been recommended as a remedy for general scleroderma and cases have been reported as cured under full doses. In fine powder salol may be sprinkled over wounds and ulcers or dusted upon chancres as a substitute for iodoform, but as it contains nearly 40 per cent. of phenol the danger of its absorption in dangerous amount is possible. It is thus evident how numerous are the indications and how many-sided are the actions of this new addition to the 1898 British Pharmacopœia.

Spiritus Anisi.—This new preparation takes the place of the old essence of anise, and in the previous article dealing with the omissions of the Pharmacopœia we pointed out some objections to its admission, chiefly on the ground of the amount of strong alcohol contained in its maximum dose in the case of very young infants. Its strength is 1 in 10, and the dose is given as from 5 to 20 minims, an amount quite inadequate to relieve the colicky pains of intestinal indigestion.

Strychninæ Hydrochloridum.—This salt takes the place of strychnine in the liquor, though the pure alkaloid is still official. Its introduction is only of pharmaceutical interest, as its actions and dose (from $\frac{1}{30}$ to $\frac{1}{15}$ gr.) are identical with those of the alkaloid, but it possesses the advantage of being more soluble. Strychnine is very sparingly soluble in water, hence in the old liquor diluted hydrochloric acid was added to assist solution by converting it into the hydrochloride. The newly-introduced salt is soluble in 35 parts of water and the liquor now contains no free acid and hence can be used

[1] Articles I., II., III., and IV. were published in THE LANCET of April 16th and 23rd and May 7th and 28th, 1898, respectively.

for hypodermic injection with advantage, as this preparation is undoubtedly a remedy of great value in urgent cases of cardiac failure when administered hypodermically in doses of 5 minims—i.e., $\frac{1}{12}$ grain.

Suppositoria Acidi Carbolici.—Each of these contain 1 gr. of phenol and they are introduced as a method for obtaining the local antiseptic, anæsthetic, or analgesic action of the drug in various painful conditions of the anus, as in ulcer, fissure, hæmorrhoids, &c.

Suppositoria Belladonnæ.—Each contains $\frac{1}{15}$ gr. of the alkaloids of belladonna root and they are introduced for their local action in similar conditions to those in which the previous preparation is indicated. Their value is, however, less obvious, but they may be useful in bladder troubles, especially in incontinence in adults. They are made with the alcoholic extract which is a standardised preparation.

Syrupus Aromaticus is a flavouring syrup without any therapeutic virtue; it contains tincture of orange, cinnamon water and simple syrup and will prove an agreeable vehicle for many nauseous or bitter drugs.

Syrupus Calcii Lactophosphatis.—This syrup affords an agreeable and efficacious method of administering lime salts in phthisis, rickets and many wasting diseases. It is not necessary to remind the physician that it possesses none of the virtues of free phosphorus and that the value of lime salts in rickets is denied by many competent observers; nevertheless, where the restorative effects of calcium are indicated this preparation may be used in teaspoonful doses with marked advantage.

Syrupus Cascaræ Aromaticus is an agreeable and elegant preparation containing in 20 oz., 8 oz. liquid extract of cascara, 2 oz. tincture of orange, 1 oz. alcohol, 3 oz. cinnamon water and 6 oz. syrup. Its dose is from half a teaspoonful to two teaspoonfuls. Its admission to the British Pharmacopœia supplies a distinct want, as hitherto the objection to the bitter and nauseous taste of the drug necessitated the use of capsules of the liquid extract, which were very satisfactory to the fastidious patient, but which did not permit of that graduation and change of dosage which is the secret in the successful treatment of *chronic* constipation.

Syrupus Codeinæ.—This is a simple solution of the phosphate of codeine in sugar and water and will be useful in allaying the hacking cough of early phthisis. Codeine acts as a sedative to the respiratory centre in the same manner as morphine acts, but it does not alter the secretion and render it adhesive to the same extent that this alkaloid does. Remedies of this class should not be prescribed where the bronchial secretion is profuse; their value lies in their power of checking or preventing *unnecessary* coughing. The dose of the syrup is from $\frac{1}{2}$ to 2 fluid drachms—i.e., from $\frac{1}{8}$ to $\frac{1}{2}$ gr. We would suggest that the minimum dose should be seldom exceeded. Of course, the preparation cannot be employed in the treatment of diabetes owing to the amount of sugar contained in it.

Syrupus Ferri Phosphatis cum Quinina et Strychnina.—This is now the official representative of Easton's syrup. The original formula appeared in the fifth edition of Aitken's "Practice of Medicine," and ever since the syrup has been extensively employed as a bitter tonic and restorative. Martindale modified the original formula, the British Pharmacopœia Committee adopted it, and now the British Pharmacopœia has with a slight change accepted it. Martindale's recipe contained 120 gr. phosphate of quinine, whilst the British Pharmacopœia directs 130 gr. of the sulphate to be used; otherwise the formulæ are identical. Each drachm contains 1 gr. anhydrous ferrous phosphate, $\frac{1}{3}$ gr. quinine sulphate, and $\frac{1}{32}$ gr. strychnine, and the dose is from $\frac{1}{2}$ to 1 fluid drachm.

Syrupus Glucosi.—This, like the aromatic syrup, and we might almost say like the following preparation, is only of pharmaceutical interest, being a mere sweetening agent, consisting of 1 oz. of the liquid glucose of commerce mixed with 2 oz. of syrup. The British Pharmacopœia revisers have devoted considerable attention to agents for sweetening and flavouring. They might with great advantage have made way for these by rejecting some of the older syrups which are worthless—viz., syrupus hemidesmi.

Syrupus Pruni Virginianæ.—Though the Virginian prune bark possesses bitter tonic and astringent qualities, and is even credited with cardiac sedative properties, it nevertheless will be chiefly used for its pleasant almond-like flavour for sweetening cough mixtures when used in the form of the syrup.

Terebenum.—The introduction of this drug into the British Pharmacopœia has been received with mingled feelings. In the opinion of not a few it seems to have outlived its good reputation of some years ago when it was reported upon so favourably by Dr. Murrell as a remedy for winter cough. It is upon the whole doubtful if it will be able to hold its official position at the next or some subsequent revision. It nevertheless is of some value as an expectorant, especially in the bronchitis associated with emphysema. The dose is from 5 to 15 minims and it is best given in capsules or on sugar owing to its turpentine-like taste and odour.

Thyroideum Siccum and Liquor Thyroidei.—The use of thyroid gland substance marks one of the most eventful epochs in therapeutics. The brilliancy of the discovery and the striking nature of the results have produced such an impression upon the minds of workers in original research that we have become inundated with a host of agents which are not creditable to scientific medicine at the end of the nineteenth century. Thus there are preparations of dried uterus, prostate, lymphatic glands, kidney, liver, mammary glands, lung, &c., vaunted for nearly every disease.

The discovery that myxœdema was produced by the absence of the thyroid secretion and the proof that a similar condition followed after the total removal of the thyroid gland in man and monkeys prepared the way for the administration of this remedy in myxœdema after many failures of grafting and transplanting experiments. Those who have not seen the results obtainable by thyroid extract in conditions following disease of the thyroid gland can hardly realise the nature and importance of this agent. After a few weeks' administration of from 5 gr. to 10 gr. daily of dry thyroid to a myxœdematous patient the metabolism of the body increases markedly the body weight falling as the appetite and consumption of food increase and the temperature rises; the facial expression begins to change towards the normal and the mental slowness and weakness rapidly pass off. Sometimes in a few months the patient so changes that recognition by old friends becomes difficult. Luxuriant growth of hair sometimes may be noticed upon a scalp which was before like polished ivory. To obtain these results small doses suffice and the common error is to administer the agent in dangerously large doses, for thyroid substance is an active poison if administered recklessly. Probably after a very decided effect is produced upon the myxœdematous condition the daily administration of 1 gr. of the dry British Pharmacopœia powder may be found quite sufficient. When the patient has been brought to the normal possibly this dose once or twice a week may be found sufficient to maintain the healthy standard. As regards dosage, however, no rule can be laid down; the practitioner should be guided by the results and the body-weight affords a fair test; the drug should be diminished or suspended when the loss of weight becomes obvious and probably it will be found necessary to maintain its regular administration in small amounts as long as the patient lives.

When it was found that sporadic cretinism was simply a form of congenital myxœdema the dwarfed idiot became the subject for thyroid medication and the results obtained were startling. Children who had ceased to grow in stature for years rapidly responded to the remedy and the mental condition brightened as the body developed. The liquor represents in every minim the one-hundredth part of a sheep's thyroid gland and it may be given in doses of from 5 to 15 minims. The revisers are to be congratulated that they did not render official any of the so-called active principles of the gland, as iodothyrin and thyrocol, which we believe at one stage of the revision was contemplated. There is no proof that the iodine-containing substance extracted from the gland is as efficacious as the dried tissue, whilst there is every reason to believe that it only contains a portion of the restorative needed. Thyroid feeding has been recommended as an agent for the cure of obesity and there is no doubt that it is highly efficacious in reducing the body weight, but it must be pushed slowly and the treatment should be suspended for intervals of a few weeks and the condition of the heart must be closely watched. Various skin diseases have been successfully treated by this new agent and quite a number of successes have been reported in psoriasis. It has been found also to possess galactogogue properties and it is claimed for it that it checks uterine hæmorrhage and assists the growth of bone in cases of ununited fractures, &c. It was at first vaunted as a cure for exophthalmic goitre, and cases were published which now appear to require elucidation, as it is a well-recognised fact

that in this disease the agent is positively dangerous and we believe it should never be administered. Exophthalmic goitre is probably the result of an abnormal activity in the gland and the symptoms bear some resemblance to those produced by large doses of the dried thyroid substance. If so the danger of supplementing the already increased thyroid secretion which is being poured into the circulation is obvious and deaths have been reported from the use of this agent in this diseased condition. Thymus gland has sometimes been found to lessen the exophthalmos and quiet the heart.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE twenty-fourth sitting of the Royal Commissioners was held on June 6th, at the Guildhall, Westminster, the official home of the Middlesex County Council. With the exception of the Right Hon. J. W. Mellor and Mr. Cripps all the Commissioners were present, but Sir George Barclay Bruce did not sit after the interval for luncheon.

The whole sitting was occupied by the examination of Sir ALEXANDER BINNIE, engineer to the London County Council, and the first part of the time was occupied in hearing his evidence with regard to the partition among the outside county authorities of those portions of the water undertakings which supply the districts beyond the administrative county of London. In the case of Kent he suggested that London should buy the water in bulk. In the case of Hertfordshire the witness believed that the wells at present in existence took almost all the water which could be obtained from the districts in which they were situated and that therefore no future increase could be expected from that source. An agreement with the Hertfordshire authorities might be made by which it was arranged that a fixed amount of water only should be taken from that county for the use of London. The witness did not know how far this proposal would meet the objections of the Hertfordshire County Council to the present proposals of that body.

In answer to the CHAIRMAN the witness said that the London County Council would have to buy the whole of the undertaking of the New River Company and that they might arrange not to draw any more water than is at present taken by the company. In considering the case of Essex there were two chief factors—the supply to the county borough of West Ham and that to the scattered outlying rural districts.

The CHAIRMAN said that he understood that the representatives of Essex wished to have the control of their own supplies and the witness admitted that in Hertfordshire and Essex there was a growing suburban population and that in Essex the growth was very rapid. In Hertfordshire, however, the growth was less rapid.

Sir JOHN DORRINGTON asked the witness whether he knew that the supply to Barnet was at present insufficient for the requirements of the district. The witness replied that he did not know that this was the case and that Barnet was outside the "purview" of the London water companies.

Mr. PEMBER, Q.C., said that the Barnet people had a water company of their own and that he might say that they were looking out for an increase of supply.

In answer to Major-General SCOTT the witness said that his proposals for the re-arrangement of the supplies for the districts beyond the jurisdiction of the London County Council would not be economical. The arrangements involved waste of energy. The most economical way of supplying the outside districts would be for them to take the water in bulk.

The CHAIRMAN suggested that the proposed arrangements for division of the present undertakings between London and the outlying districts were so "impracticable, inconvenient, and expensive," that in case of purchase by the London County Council the outlying authorities would be forced to take the water in bulk. The witness said that the best method would be for them to take it in bulk.

Mr. PEMBER, Q.C., examined the witness on behalf of some of the water companies. The first part of his examination was directed to show the enormous increase which was taking place in the population in the outlying districts. During the last sixteen years the population of Croydon had doubled. What provision did the witness propose should be made for future possible increase? A well at Addington belonging to the Croydon Corporation supplied 2,000,000 gallons daily, but by an arrangement made between the Croydon Corporation and the Kent Water Company the former were prevented from taking more than that amount. The witness said that it was proposed to give the outlying authorities 20 per cent. more than they had at present, but beyond this no provision for their increasing wants was proposed.

Mr. PEMBER asked the witness whether with regard to the arrangements for the transfer of part of the water undertakings to Surrey he had considered in detail the questions of the pumping arrangements and of the filter-beds, and presented some points for his consideration. The witness said that with regard to water which was to be supplied through the works now owned by the Lambeth company a dam might be built across the reservoir to divide the water intended for the use of Surrey from the water which was to be reserved for London.

With regard to the supply from the Coombe reservoir counsel stated that three engines were used for pumping the water there and asked the witness whether he thought it would be convenient that the engines used by the Surrey authorities and those used by the London authorities should be not only situated in the same house but have a common supply of steam? Was it likely that servants working for the London County Council and those working for the county of Surrey would at all times work harmoniously together under such conditions? In the case of the Lambeth station at Brixton-hill counsel pointed out that there was one coal store and the witness suggested that part of it might be cut off for the use of the Surrey authorities. In the case of the supply coming from the Selhurst reservoir counsel pointed out that under the arrangement proposed by the witness the supplies from that reservoir would go into the districts of four different local authorities. He pointed out also that in the case of Seething Wells there was only one filtered water well and asked whether the witness thought that the arrangements with regard to sand washing and filtration could be harmoniously carried on by the servants of two different authorities. Workmen were not "angels." Under the proposed arrangements Norwood reservoir would supply the districts of Croydon, London, Surrey, and Kent. How was this reservoir to be partitioned amongst these four authorities? Counsel also asked the witness whether he knew that Norwood reservoir supplied parts of Surrey which the Selhurst reservoir could not supply.

With regard to the Southwark and Vauxhall Company Mr. PEMBER pointed out that the 12 in. main which the witness suggested should be given over to the county of Surrey did not exist; there was no 12 in. main from Richmond to Hampton.

Mr. POPE, Q.C., on commencing his cross-examination suggested that the engineering difficulties were so considerable and that the cost would be so great that a division of the existing works between London and the outlying authorities could not be economically carried out, and he asked the witness whether the question did not really resolve itself into whether the authorities should or should not be supplied with water in bulk. The witness said that there were really three courses open—(1) that the supply should go on as at present; or (2) that the water should be brought from London in bulk by the outlying districts and that they should take over the pipes which now exist in their districts; or (3) that there should be a partition of which the details should be arranged by arbitration.

Mr. LEWIS COWARD, on behalf of the Kent Water Company, quoted an opinion given by the chairman of the Kent County Council to the effect that they wished to prevent the London County Council from taking their water from them. The Kent Company differed from the others in the fact that they had no storage reservoirs and no arrangements for filtration. Of the London district supplied by the Kent Company sixteen miles, roughly speaking, were at present built over and thirteen square miles were not built on. The area of the Kent Company had been extended throughout the county at the instance of, and by the Parliamentary assistance of, the various local authorities whose districts the company supplied.

Lord ROBERT CECIL, on behalf of the Hertfordshire County Council, asked how the people at present supplied with water by the New River Company would fare in the case of purchase of the company by the London County Council, and if the people of Hertfordshire were supplied in

bulk with water by the London authorities who would arrange the price the people of Hertfordshire would have to pay. The witness said that the London County Council proposed to buy the New River Company and to take the water. The people in Hertfordshire at present supplied could either buy the water back in bulk or be supplied as they are at present.

Mr. FREEMAN, Q.C., re-examined the witness on behalf of the London County Council and long extracts were read from the Balfour Report and from other sources with a view to prove that the Staines reservoir scheme as recommended by Lord Balfour's Commission and originally suggested by Messrs. Hunter and Fraser was intended for the storage of water for six metropolitan water companies and that all water taken from the Thames ought to be stored in those reservoirs and that the present intakes of the metropolitan water companies ought not to be used.

In answer to Major-General SCOTT the witness said that the great objection to the Thames water was that no less than 20,000,000 gallons of clarified sewage were poured into the river and at some periods this amounted to no less than 5 per cent. of the total flow of the river.

Major-General SCOTT suggested that in summer occasionally sewage effluents did not really exist; the whole of the water was evaporated.

Sir JOHN DORRINGTON asked how far the sewage could be traced from Crossness up the Thames and the witness said that formerly it could be traced as far as London Bridge. There was, however, a certain amount of increase in the chlorides in the water as far as Hammersmith.

At the conclusion of his evidence Sir ALEXANDER BINNIE summed up his reasons in favour of going to Wales for the future water-supply of London.

The twenty-fifth sitting of the Royal Commissioners took place at the Guildhall, Westminster, on June 13th. The whole of the time was occupied by the examination of Mr. R. M. Littler, Q.C., chairman of the County Council of Middlesex.

Mr. LITTLER said that the County Council of Middlesex is not in the least a political body and that it represents people of all shades of opinion. He gave in detail the facts making it of importance to Middlesex that the greatest economy should be exercised. The population of the administrative county of Middlesex, according to the Census of 1891, was, he said, 559,392. At the present time it is over 740,000. The area of the district is nearly 233 square miles. The rateable value in 1891 was £3,180,633. The districts in which the most rapid extension of water-supply is taking place are Tottenham, Edmonton, Southgate, Hornsey, and the western districts of the county, which are supplied by the West Middlesex and the Grand Junction Waterworks Companies. The water-supply of Middlesex is derived from four of the metropolitan water companies and there are in addition a number of supplies given by private companies and by urban district councils. The East London Waterworks Company supplies at Tottenham a population of over 5000; the Grand Junction Waterworks Company supplies Acton, Brentford, Ealing, Hampton, Hampton Wick, Hanwell, Heston, Isleworth, Twickenham, and Teddington—a population of over 147,000; the New River Company supplies Edmonton, parts of Enfield and Tottenham, Hornsey, Southgate, South Hornsey, and Wood Green—a population of 180,000. The West Middlesex Waterworks Company supplies Chiswick, Hendon, and Willesden—a population of over 130,000. The parts of Middlesex not supplied by the metropolitan companies are supplied from the waterworks of local authorities and by companies whose districts do not extend to London. The Enfield Urban District Council supplies a population of 34,600; Tottenham Urban District Council a population of 56,977; and Uxbridge Urban District Council a population of 8636. At Barnet a population of over 30,000 is supplied by a local gas and water company. The Colne Water Company supplies a population of 23,660 in Middlesex and gives also supplies in Hertfordshire; the South-West Suburban Water Company supplies in Middlesex a population of 37,100 and gives supplies also in the county of Surrey. The Rickmansworth and Uxbridge Valley Water Company supplies a population of 15,350. The Central Middlesex Water Company is a small undertaking and supplies a population of 747. The figures given are those of the population of 1896, since which date considerable increase has taken place in some of the districts. The witness, as chairman of the Middlesex County Council, said he had been in communication with most of the urban and rural authorities in connexion with the water-supply. Two conferences had been held with representatives of district councils, the first in February, 1895, and the second in January of the present year. At the first conference the following resolution had been passed:—

That the representatives of the district councils in the county of Middlesex now present agree that their interests may be safely entrusted to the County Council of Middlesex as regards the course to be adopted in dealing in Parliament with the several Waterworks Bills being promoted by the London County Council and that the district councils be recommended to present petitions to both Houses in opposition to the Bills as co-petitioners with the county council.

The following resolution, which represents the opinion of all the local authorities in Middlesex, was passed at the meeting held on Jan. 26th, 1898:—

That this conference, having considered the resolution passed by the conference in 1895, approves of the past policy of the County Council of Middlesex and is of opinion that the interests of the district councils should be left in the hands of the council as representing the whole county before the Royal Commission.

The Parliamentary Committee of the Middlesex County Council made a report on the London Water Commission Bill (1891) and on the Metropolis Water-supply Bill (1891). These resolutions were made on the supposition that purchase of the water companies by some public body would take place. The resolutions were as follows:—

1. That the interests of the county require that in any dealing with the question of the London water-supply as it affects Middlesex provision should be made against: (*a*) the sinking of any new wells in the county; (*b*) the deepening of any existing wells in the county.
2. That provision should be made for limiting the abstraction of water for the London or any other external supply from Middlesex.
3. That no scheme will be acceptable to Middlesex which does not provide: (*a*) for no further water being abstracted from the Middlesex area; (*b*. for the independent control by Middlesex from the beginning of (*a*) the sources of supply for Middlesex; (*b*) the supply service; (*c*) the absolute non-interference with Middlesex either as to rating or otherwise.

The County Council of Middlesex have re-confirmed the position they then took up in case purchase should be decided on. At the present time the County Council of Middlesex and the councils of several urban and rural districts in the county strongly object to any outside authority having control of the water-supply in any part of the administrative county of Middlesex or to having power to levy rates in the county. The witness objected to purchase, partly because he believed that if a water trust were formed the county of Middlesex would not be sufficiently represented.

The CHAIRMAN asked the witness whether he would object to purchase of the companies by a water trust on which representatives should be sent from the Metropolitan counties, the Thames Conservancy, the Local Government Board, &c., and the witness said that control of the water by such a board would be less objectionable than that by the London County Council. Purchase of the water companies by the State would be still less objectionable. The witness, however, thought that purchase of the water companies' undertakings was not desirable.

In answer to Mr. DE BOCK PORTER the witness said that he did not see any great injustice in the fact that prices charged for water varied in different parts of London. The circumstances of rating were always taken into account in fixing rents.

In answer to the CHAIRMAN the witness said that the Middlesex County Council had received complaints with regard to the water-supply at Willesden. The attention of the companies had been called to the matter by the council and it had been remedied.

In answer to Mr. CRIPPS, Q.C., the witness said that he did not approve of Sir John Lubbock's proposal that water consumers should be directly represented on the boards of directors of the water companies. In his opinion it would weaken the control which the public already exercised over the companies and the power of the new directors would not be great as they would always be in a minority.

Mr. BAGGALLAY, Q.C., on behalf of the water companies, asked some further questions on this point. The witness said that in the case of the Indian railways to which Sir John Lubbock had referred the dividends were guaranteed by the East India Company, that that company had in some cases paid part of the original outlay of the undertaking, that the company had a reversionary interest in the property, and that they had in many cases given the land on which the railways were built.

At the conclusion of the sitting Mr. CRIPPS, Q.C., told Mr. Baggallay that the Commissioners would be glad to

understand what position the water companies took up with regard to the inquiry. Were the companies in favour of control or of purchase or did they wish to be left alone?

Mr. BAGGALLAY said that the water companies were opposed to purchase and they did not think much further control was necessary; they were on their defence.

The next meeting of the Commissioners will take place on Monday, June 20th.

THE ANNUAL DINNER OF THE ARMY MEDICAL STAFF.

THE officers of the Army Medical Staff held their annual dinner at the Whitehall Rooms of the Hôtel Métropole on Monday evening last. The attendance was very good—in fact, well beyond the average, notwithstanding the calls made upon the services of army medical officers by the campaigns in India and Egypt. Moreover, the recent concession of the claims of the service to become, as a Royal Army Medical Corps with definite military titles and rank, an integral portion of the army and not a mere appendix, announced by Lord Lansdowne in his speech at the banquet given to the medical profession by the Lord Mayor at the Mansion House on May 4th, infused into the meeting a spirit of enthusiasm pleasant and most satisfactory to witness. At this dinner it has been the custom of recent years strictly to dispense with after-dinner oratory, but at this particular juncture Surgeon-Major-General JAMESON, C.B., the Director-General, wisely, indeed perhaps unavoidably, departed from tradition, and after giving the health of Her Majesty the Queen (which toast, of course, is never omitted) again rose and said that on this special occasion he must depart from their usual custom and congratulate them on the new warrant which was about to be issued and on the fact that they were at length to become an actual part of, and not merely attached to, the army. He added that their thanks were sincerely due to Lord Lansdowne for his statesmanlike grasp of the situation and for his willing recognition of their just claims. He also pointed out that, although it might not be so well-known to many of them, they were also much indebted to Lord Haliburton, as they were to General Sir Evelyn Wood, who was prominent in acknowledging their right to army rank and title in a Royal corps. He then referred to the services rendered by the Royal College of Surgeons of England, the Royal College of Physicians of London, and the sister Colleges of Scotland and Ireland, the British Medical Association (especially referring to the work so admirably carried out by a sub-committee of its Parliamentary Bills Committee under the chairmanship of Dr. W. Gordon of Exeter), the medical press, and the medical profession generally.

Surgeon-Major-General J. B. HAMILTON, in a few well-chosen words proposed the health of the Director-General, emphasising the great value of the influence of Surgeon-Major-General Jameson in securing the desired concessions—reforms for which he (Surgeon-Major-General Hamilton) had himself worked for thirty-nine years, and which he was glad to see granted during the tenure of office of the present Director-General. The toast of "The Guests" was proposed by Sir J. H. KER INNES, K.C.B., and responded to by Sir SAMUEL WILKS, President of the Royal College of Physicians of London, Sir WILLIAM MACCORMAC, President of the Royal College of Surgeons of England, and Dr. GORDON. Space will not permit us to give the various speeches at any length. Suffice it to say that they were without exception terse, to the point, and of a congratulatory nature. If any dissatisfaction exists amongst army medical officers with the proposed new warrant (which we understand will soon be issued) it was not proclaimed at the very successful and pleasant reunion which we thus imperfectly record. A word of acknowledgment is due to the services of Brigade-Surgeon-Lieutenant-Colonel J. Hector, who acted as hon. secretary of the dinner.

The following officers and guests were present:—*Surgeon-Major-Generals* J. Jameson, C.B. (in the chair), A. F. Bradshaw, C.B., Sir C. A. Gordon, K.C.B., J. B. Hamilton, Sir J. H. Ker Innes, K.C.B., H. S. Muir, W. Nash, T. F. O'Dwyer, A. F. Preston, J. B. C. Reade, C.B., P. B. Smith, W. Taylor, J. Warren, and W. M. Webb. *Surgeon-Colonels* H. Comerford, O. Codrington, W. G. Don, J. H. Jeffcoat, J. Maturin, F. W. Moore, J. L. Notter, T. O'Farrell, F. B. Scott, C.M.G., W. Sly, W. F. Stevenson, and F. H. Welsh. *Brigade-Surgeon-Lieutenant-Colonels* W. B. Allin, J. F. Beattie, H. M. Blennerhassett, C.M.G., J. A. Clery, W. Donovan, J. D. Edge, R. Exham, T. J. Galliwey, C.B., W. L. Gubbins, W. Johnston, W. Keir, H. Mackinnon, D.S.O., J. Martin, H. J. O'Brien, C. F. Pollock, J. Powell, S. K. Ray, W. Temple, V.C., and W. J. Wilson. *Surgeon-Lieutenant-Colonels* J. A. Anderson, R. T. Beamish, U. J. Bourke, W. L. Chester, A. Doig, W. C. Gasteen, H. Grier, J. Hector, R. D. Hodson, G. A. Hughes, H. Jagoe, G. T. Langridge, T. Ligertwood, C. Mackinnon, W. F. Rattledge, B. W. Somerville-Large, J. Tidbury, and T. Wright. *Surgeon-Majors* W. Babtie, C. R. Bartlett, J. Battersby, W. G. Bedford, W. C. Beevor, R. P. Bond, H. Carr, Sir J. R. A. Clark, Bart., A. B. Cottell, J. G. Crofts, W. Dick, H. P. Elkington, J. J. Falvey, C. E. Faunce, R. I. D. Hackett, R. G. Hanley, F. A. Harris, A. P. Hart, J. G. Harwood, R. P. Hetherington, G. D. Hunter, D.S.O., H. E. R. James, R. Jennings, F. J. Lambkin, T. B. Maclean, W. S. Macpherson, W. J. Macnamara, T. A. Marsh, A. J. Moberley, A. H. Morgan, A. Morphew, R. E. Morse, W. H. Murray, E. North, T. J. O'Donnell, G. Sylvester, H. N. Thompson, D. Wardrop, E. M. Wilson, C.M.G., and B. T. Zimmerman. *Surgeon-Captains* T. B. Beach, A. P. Blenkinsop, T. H. F. Clarkson, J. G. Deacon, H. E. Dowse, H. N. Dunn, C. Garner, C. W. R. Healey, M. L. Hughes, J. C. Jameson, O. R. A. Julian, R. E. Kelly, W. B. Leishman, J. MacCarthy, C. J. MacDonald, S. G. Moores, F. J. Morgan, H. J. Parry, C. S. Spong, and H. C. Thurston. *Guests:* the President of the Royal College of Physicians, the President of the Royal College of Surgeons, the Senior Officer Militia Medical Staff Corps, Mr. Vesey Holt, Dr. William Gordon (of Exeter), Mr. Thomas Wakley, jun. (joint editor of THE LANCET), and Dr. Dawson Williams (editor of the *British Medical Journal*).

The Director-General of the Medical Department of the Royal Navy, the President of the Indian Medical Board, and the Honorary Commandant of the Volunteer Medical Staff Corps also accepted invitations but were prevented from being present.

THE ANNUAL DINNER OF THE INDIAN MEDICAL SERVICE.

THE second annual dinner of the officers of the Indian Medical Service was held on Thursday, June 9th, at the Café Monico, Surgeon-General Sir Joseph Fayrer, Bart., K.C.S.I., F.R.S., being in the chair. As will be seen from the list given below a large number of members of the service and guests were present. It is probable, however, that the gathering would have been still larger but for the fact that, except in the case of those invalided (few of whom were well enough to put in an appearance), furlough from India is closed owing to famine, plague, and war, and as a necessary consequence very few officers on the active list were able to be present. Moreover, the "Delhi" dinner and the College of Surgeons dinner being unfortunately held on the same evening, Field-Marshal Sir Donald Stewart, the respective Presidents of the Royal College of Physicians of London, of the Royal College of Surgeons of England, and of the Royal Medical and Chirurgical Society, and other guests were prevented from attending. Surgeon-General Sir Alexander Christison, Bart., and Surgeon-General Sir Benjamin Simpson, K.C.I.E., who had intended to be present, found themselves at the last moment unavoidably detained.

After the toasts of "The Queen" and "The Royal Family" had been proposed from the chair and loyally honoured the toast of "The Sister Services" was eloquently given by Surgeon-General A. C. C. DE RENZY and responded to by Surgeon-Major-General JAMESON, C.B., Director-General of the Army Medical Department, in a very interesting speech with which we hope to deal at greater length in an early issue.

Surgeon-Major-General JAMESON then proposed the toast of the evening, "The Indian Medical Service."

Sir JOSEPH FAYRER, on behalf of the Indian Medical Service, thanked the Director-General for the kind things he had said about that service, and also for having done him the honour of associating his name with the toast. It was a source of gratification to the Indian Medical Service to have been so spoken of by the Director-General, who had so eloquently referred to their work. He was glad to see that there was such a good attendance at this dinner and that the hopes expressed at the last one that it might be so had been realised, and he trusted that it would continue, for he felt satisfied that this reunion of the older with the younger members was for the interests of the service and would conduce to the prestige and *esprit de corps* which were so desirable. On behalf of his brother officers he accepted all that the Director-General had said, for tradition and history testified to its truth. He had on a former occasion expressed a hope that some one would undertake to write a history of the Indian Medical Department from its foundation and he still hoped that this would be done, for they had a right to be proud of a service which had always been so varied in its character. They knew how intimately it had been associated with the foundation and progress of the Indian Empire and how much it had done to harmonise differences and to reconcile Eastern to Western rule and that it had originated and developed several important departments of the State. They had pride also in remembering that though its members had not been undistinguished as surgeons and physicians, in pure science, in philology, and in diplomacy and administration such men as Falconer, Roxburgh, Cleghorn, H. H. Wilson, Aloys Sprenger, Gabriel Broughton, McNeil, Robertson, and many others in different departments of science had conferred a lustre and character upon the Indian Medical Service which were peculiarly its own. It was needless for him to refer to their great sanitary and medical work, for it was well known to all and was associated with such names as those of Annesley, Twining, Ranald Martin, and others who were still carrying it on and whose researches at present into the remoter causes of disease offer hope of the solution of many difficult problems hitherto not satisfactorily explained. He would not weary them, did his memory allow him, by recapitulating a host of distinguished names such as he presented to them at the last meeting. Whatever might be in store for the Indian Medical Service in its present combined aspect there could be no doubt that its members justly regarded it with pride and affection and aspired not only to sustain its ancient prestige but to maintain that standard at its highest pitch in the future.

The toast of "The Guests" was cordially given by Deputy-Surgeon-General Sir JOSEPH EWART and responded to by Sir R. DOUGLAS POWELL, Bart., M.D., and Dr. SANSOM, President of the Medical Society of London.

Sir J. FAYRER subsequently made a few remarks with reference to the proposed changes in the character of the medical service and said that whilst desiring to express their gratitude to the Director-General and to the other authorities at whose instigation and by whose efforts these changes were effected, and which would in all probability extend to the Indian Medical Service, and expressing his conviction that the alterations made must conduce to the benefit of all concerned, he desired most emphatically to repudiate the idea that the medical officers in any sense wished to ignore their own special duties or to interfere with those of other departments. There was no desire on their part to substitute purely military titles for professional ones, but it was necessary that if they were to form part, as they must inevitably do, of a military system where they have control and command and a position of responsibility and authority to maintain, where they wear the insignia of soldiers and are subject to military discipline and law, they must necessarily have such rank, such titles, such authority, and such position as would enable them to carry on their duties with efficiency. As military officers—and they were proud to think that as medical they were military officers — they could accept no subordinate or inferior position. The old ideas which might have come down from feudal times have long since disappeared; the medical officer in social position, in education, in responsibility, holds just as important a place as does any member of the so-called combatant branch and is an essential part of the army. The distinction between combatant and so-called non-combatant is a well-marked one, and has its special significance in the service more than might at first sight appear, but upon what grounds the latter term is applied to the medical service it is impossible to comprehend. Every campaign, every military expedition bears witness to its absurdity. The changes which are about to be inaugurated will no doubt remedy some of these defects, and though something is still wanting, it would be most ungracious not to accept what has been given in a proper spirit. It is recognised that the Medical Department is an integral portion of the army, that medical officers are not merely glorified camp followers, that they have duties to perform which from the constitution of the army require them to have authority. There is only one recognised authority in the army and that is military rank and title. Relative and comparative rank are without meaning. It is well to discard also the idea, much proclaimed but of little validity, that military titles of colonel, captain, and so on can only be held by the so-called fighting soldiers, the fact being that they merely signify rank held by an officer in any particular department in the army. He concluded by saying that he hoped the concessions made would be received in a proper spirit of gratitude and that out of it all would come benefit alike to the service and to all concerned.

A few impromptu words in praise of the comparatively large numbers of members of the medical services who have won that most distinguished decoration the Victoria Cross were acknowledged by Surgeon-Major J. CRIMMIN, V.C., with a brevity and modesty becoming a medical hero.

The proceedings of a very enjoyable evening were brought to a close with expressions of thanks to Sir Joseph Fayrer for presiding and to Surgeon-Lieutenant-Colonel Freyer for the trouble he had taken in carrying out all the details necessary to ensure the success of the meeting. We venture to offer to him also our own congratulations.

The following is a list of the officers and their guests who were present: *Surgeon-Generals* W. H. Adley, J. Cuningham, C.S.I., A. C. C. De Renzy, Sir Joseph Fayrer, Bart., K.C.S.I., F.R.S. (in the chair), W. Pearl, G. H. Ray, and P. W. Sutherland. *Surgeon-Major-Generals* W. R. Hooper, C.S.I., and W. R. Rice, C.S.I. *Deputy Surgeon-Generals* Sir J. Ewart, J. C. Penny, B. Williamson, and W. A. S. Wynne. *Surgeon-Colonels* W. Cates, C. Costello, D. E. Hughes, A. Porter, and W. H. Roberts. *Bridage-Surgeons* J. E. I. Aitchison, C.I.E., J. Barter, E. F. Drake-Brockman, G. Grant, R. Gray, I. B. Lyon, C.I.E., C. W. Mackury, G. Massy, G. D. Riddell, J. B. Scriven, T. G. Skardon, and G. S. Sutherland. *Surgeon-Lieutenant-Colonels* D. Baker, D. F. Barry, J. W. Clarkson, P. J. Freyer, J. O'Neil, A. J. Sturmer, and A. H. Williams. *Surgeon-Majors* P. F. Bellew, W. Caldwell, J. Crimmin, V.C., A. M. Crofts, T. Duka, D. F. Dymott, A. S. Faulkner, G. M. Giles, W. Harvey, J. Ince, A. W. D. Leahy, C. P. Lukis, R. W. S. Lyons, C. Manifold, and M. O'Dwyer. *Surgeon-Captains* D. C. Johnston and H. W. G. Macleod. *Surgeon-Lieutenant* E. L. Perry. *Guests:* Sir Richard Douglas Powell, Bart.; Surgeon-Major-General Jameson, C.B. (Director-General, Army Medical Department), Dr. Sansom (President of the Medical Society of London), Mr. Austin Low, Mr. Thomas Wakley, jun. (joint editor of THE LANCET), Dr. Dawson Williams (editor of the *British Medical Journal*), and Mr. Percy Dunn (editor of the *Medical Press and Circular*).

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on June 9th, the President, Sir WILLIAM MACCORMAC, Bart., being in the chair.

As recommended by the committee appointed for the purpose it was resolved that Fellows of the College should be entitled to wear a special gown on all ceremonial occasions. The gown is to be a black stuff gown with crimson satin facings of a regulation shape and shade of crimson. A specimen Fellow's gown, made by Messrs. Ede and Son of Chancery-lane, was submitted to the Council. It was further resolved that Fellows of the College who are also graduates of any University may use the gowns representing their degrees on the occasions when the Fellow's gown would otherwise be worn.

The following report from the Laboratories' Committee was approved:—

1. *The work on diphtheria for the Metropolitan Asylums Board.*—The preparation of antitoxic serum. The director reported that the new stables have been completed and taken over and that they are admirably suited for the purpose for which they are required. Since March 4th 6000 doses of antitoxic serum, each containing 2000 units, for the treatment of diphtheria in the hospitals of the Metropolitan Asylums Board have been supplied and all the demands fully met. During this period 12,000,000 units have been supplied, against an average of 12,252,000 for the preceding two quarters. During this period the average strength of the antitoxin has been so far raised that it has been possible to send out the 2000 units in quantities of from 6·5 to 7·5 c.c.

2. *Researches in connexion with the grant from the Goldsmiths' Company.*—Dr. T. G. Brodie and Dr. Cartwright Wood have continued their investigations and have obtained some most satisfactory results. In fulfilment of one of the conditions of the grant from the Goldsmiths' Company, that antitoxin should, if possible, be supplied for use amongst the poorer classes of the community, the director has continued the supply of antitoxic serum to various general and children's hospitals in London during the past quarter, as well as to certain medical practitioners for cases fulfilling the necessary conditions.

The following examiners were appointed:—

Elementary Biology.—Peyton T. B. Beale, Frederick Gymer Parsons, Thomas William Shore, and Thomas George Stevens.

Anatomy under the Examining Board.—Stanley Boyd, William Bruce Clarke, George Henry Makins, and Arthur Robinson.

Physiology under the Examining Board.—John Rose Bradford, Leonard Erskine Hill, and Walter George Spencer.

Anatomy for the Fellowship.—William Frederick Haslam, James Ernest Lane, Charles Barrett Lockwood, and Frederick Gymer Parsons.

Physiology for the Fellowship.—Thomas Grigor Brodie, D'Arcy Power, Ernest Henry Starling, and William Henry Thompson.

Midwifery under the Examining Board.—William Radford Dakin, Arthur Hamilton Nicholson Lewers, Amand Routh, and Herbert Ritchie Spencer.

Public Health.—Part I., Arthur Pearson Luff; Part II., Edward Seaton.

A letter was read from Mr. R. B. Anderson, stating that he intends to take proceedings to establish his right and that of all Fellows and Members to exercise the franchise conferred on them by the Medical Acts for the purpose of choosing a member of the General Medical Council, and asking whether the Council will treat such proceedings as a friendly suit and pay the costs of both sides with the College funds. It was resolved that Mr. Anderson should be informed that the Council are not prepared to accede to the propositions made by him in his letter.

The PRESIDENT reported that he had accepted on behalf of the Council an oil portrait, by Benjamin Robert Haydon, of Thomas Alcock, M.R.C.S. Eng., father of the late Sir Rutherford Alcock, K.C.B., presented to the College by Lady Alcock.—The best thanks of the Council were voted to Lady Alcock for her present.

The PRESIDENT stated that the vacancy on the Court of Examiners occasioned by the expiration of Mr. R. J. Godlee's period of office on July 7th next, and the vacancy on the Board of Examiners in Dental Surgery occasioned by the expiration on the same date of Mr. H. Mummery's period of office, would be filled up at the quarterly meeting of the Council on July 14th. The President also stated that Mr. Godlee and Mr. Mummery were candidates for re-election.

THE BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.

THE annual conversazione of this society was held on June 8th, at Limmer's Hotel, Conduit-street, W., Dr. W. V. SNOW presided, and an address was delivered by Dr. G. Vivian Poore.

Dr. POORE said the subject on which he proposed to make some remarks, the Circumstances which Influence or tend to Influence the Effectiveness of Climatic Treatment, was one of importance to the general physician. Medical education should be practical and the knowledge obtained from books should be supplemented in other ways. This especially applied to the question of climatic treatment. Every day he regretted that he had never been to the tropics or to any of our southern colonies. He felt constantly that his knowledge of these places obtained from reading was not the same thing as the knowledge which residence would give. The first circumstance which influenced for good climatic treatment was the degree of practical knowledge possessed by the prescriber. Climatic treatment was often prescribed by people who had never visited the climate, and the prescription was made more or less in ignorance. Again, it was not sufficient to prescribe climate in a wide sense, as, say, the climate of the South of France or of Canada. Accurate local knowledge was equally important. As an example, if we went into a garden with a wall running east and west we should find on the south side, perhaps, warmth and sunshine and ripe peaches, and hear the hum of insects; but if we went to the north side of the same wall we should find it in shadow with a chilling atmosphere, hard pears and unripe cherries, and fustiness coming from the dank and damp earth. When we remembered that these two climates were only 9 in. apart we should see that attention to detail was very important. The physician should, then, have local as well as general knowledge in prescribing. Personally he (Dr. Poore) was very particular never to recommend a place unless he had been there. One of the good things which this society would bring about was the furnishing of accurate details about the various climates. Failure to accommodate the recommendations of the physician to the convenience of the patient was another point which should be considered, as was also the adaptability of the patient to his surroundings. To send a fashionable patient to a dull place or a dull person to a fashionable place was not much good. We should remember that "The labour we delight in physics pain." Overcrowding was another point which should be considered. Directly a place became famous it ran this risk and as the place became popular it deteriorated in its health-giving properties. The house in which the patient resided should also receive attention. When we sent a person abroad in the winter we should remember that he would probably spend twice as much time indoors as out of doors, and if the house should be unwholesome the good done in the open air would be counteracted by the harm done in the house. Modern hotels were not the place for the permanent residence of chronic invalids. Proper ventilation could not be obtained in them as at present constructed. An hotel for a chronic invalid should be constructed on the plan of an infectious hospital, but this did not mean that it should resemble an institution. It was getting very much the custom now to build separate cottages for invalids around some central common rooms. The colleges at the Universities of Oxford and Cambridge formed excellent models for hotels. A little more money should be spent on the land and a little less on decorations which prevented adequate cleaning and harboured dust. Inadequate food was another thing which should be considered. The food was often inadequate; it ought to be abundant, simple, and wholesome. Then it was very undesirable that people should be herded together too much, and this especially applied to the phthisical. Dr. Poore here gave an account of his residence for some time in a "cure-house" for tuberculosis, and showed how depressing it was to the patient to see others come down to breakfast without appetite and play with their food and also to listen to the conversation, which was equally depressing. Perhaps the most important duty of a physician prescribing climatic treatment was the selection of a medical man to take charge of the patient while abroad. In this country it was easy enough to form some opinion of the medical man's qualifications by means of the directory, &c., but in foreign countries it was exceedingly difficult. Health resorts abroad, too, were the happy hunting grounds of irregular practitioners of every kind. This touched the question of reciprocity in medical practice and it was unfortunately true that increased opposition was being made to the residence of English practitioners in foreign places. Even if this question of reciprocity were not settled with tolerable advantage to English practitioners it would do nothing but good in the end, for it would simply lead to the development of our home and colonial health resorts. The British Empire contained every description of climate. Egypt was being utilised, South Africa was beginning to be heard of, and we should probably very soon hear of Canadian health resorts. This little opposition on the part of the

foreigner then would do us nothing else but good. To sum up, there was the want of knowledge, especially local knowledge, on the part of the person prescribing the treatment, the want of means to really adequately carry out the advice given, the failure to adapt the place to the patient or the patient to the place, overcrowding, the ill-construction of hotels or similar establishments and the crowding of many people in one house, sometimes inadequate feeding, the herding of people together and the standing of the medical man into whose care the patient was entrusted.

During the evening there was an exhibition of Meteorological Instruments by Messrs. NEGRETTI and ZAMBRA and Dr. W. S. HEDLEY showed a Stereoscope for exhibiting x ray pictures in relief. Music and refreshment added to the enjoyment of the conversazione.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Exeter Urban District.—Until quite recently the condition of Exeter *quâ* sanitation was practically unknown save to the few officials immediately concerned with it. The medical officer of health is not under the provisions of the Order of the Local Government Board and hence he has not submitted an annual report. Certain visits of Local Government Board Inspectors seem, however, to have had a good effect and Exeter is now falling into line and taking the position which its population of 38,000 justifies. Its sanitary administration is, however, somewhat unique. The medical officer of health, who received for several years but £25 per annum, together with £50 for part attendance at the isolation hospital, has recently been paid an additional £50 for making an annual report. It has, however, to be noted that out of this latter sum he has to pay £20 to the inspector of nuisances for his share in the annual report. Much, however, of the work is done by the district medical officers, each of whom, under the title of assistant medical officer of health and with a salary of £75, supervises the sanitary condition of his Poor-law district and attends in turn at the isolation hospital. None of these gentlemen possessed at the time of Dr. Fletcher's inspection of the district the diploma of public health and it may be that the appointment of a whole time officer would have its advantages. There does not seem about the sanitary administration of Exeter that centralisation of matters in one medical officer of health which is so highly desirable. Dr. John Woodman speaks highly of the "septic tank" method of sewage disposal which was introduced by Mr. Donald Cameron, the Exeter surveyor, and which has been in operation for the sewage of a small portion of the city for a considerable time. Dr. Woodman has little doubt but that the Royal Commission on Sewage Disposal under the chairmanship of Lord Iddesleigh, who, by the way, resides near Exeter, will report favourably on the scheme. The water-supply of the city is derived from the Exe, into which above the intake there passes certain treated and untreated sewage. Under these circumstances it is matter for congratulation that an improvement in the plant for filtration is to be effected.

Surrey County District.—The annual report of this administrative county appears, as usual, early, and Dr. Edward Seaton, the medical officer of health, is to be congratulated on being able to issue the volume so soon. There are obvious advantages in the appearance of a report of this class at a time when the events to which it relates are fresh in men's minds, provided, that is, that the report does not suffer curtailment as a result of speedy issue. The volume before us, which runs to 70 pages, contains not only the annual report properly so called but also—and indeed no small portion of the pamphlet is occupied thereby—a report of a conference on water-supply which was held on March 21st of this year, and some remarks by Dr. Seaton on certain biological methods of sewage disposal. The administrative county of Surrey has, many persons will probably learn with surprise, a population of not yet half a million. Its general death-rate during 1897 was but 12·2 per 1000, the rates for the urban and rural districts being nearly identical. The infantile mortality of the rural districts was 100, and in the urban district 119, per 1000 registered births; the zymotic death-rate was 1·29 per 1000. This, the statistical, portion of the report is not as full as is perhaps desirable in a county report—for instance, we look in vain for the population of each district in the county and for the separate rates for diseases such as scarlet fever and diphtheria. This fact rather detracts from the value of the report for reference purposes, and it would be useful if in his next annual report Dr. Seaton could see his way to repair the omission; otherwise we fear an interesting series of figures will be interrupted. In previous reports Dr. Seaton has entered more fully into the statistics of the county and has furnished the usual Table A together with a summary of the notification returns, referring to Table A both in the index and in the text. An interesting part of the volume before us is that which relates to the conference of medical officers of health to which reference has already been made. There would seem to be very fair promise that before long progress may be made in the direction of a better control of the water-supplies in the administrative county. The resolutions which were passed at the meeting had reference to such matters as the necessity for the periodical examination of, and report upon, the water-supplies, the examination in certain cases to be made by the district and county officials in conjunction; to the desirability of every district council being possessed of accurate information as to the sources of supply of every house in the district, and to the importance of water-softening processes being applied where necessary. It is to be hoped that these expressions of opinion elicited by Dr. Seaton upon these elementary but nevertheless highly essential points may soon have an outcome in practice. With respect to the prevalence of enteric fever in the county a map is furnished, constructed after the manner of those which appear in the last report of the medical officer of the Local Government Board, showing the incidence of enteric fever (a three years' average only) on the several districts of the county; but, as Dr. Seaton himself observes, three years is too short a period for any reliable deductions. Dr. Seaton's explanation to his sanitary committee of biological methods of sewage purification should prove useful to them and to others.

West Lancashire Rural District.—Dr. Herbert Peck furnishes in his current annual report a plan of the existing and proposed water mains within this district. A plan of this description cannot fail to be of value in connexion with inquiries relative to water-borne disease and it is well that it should be easily accessible for reference. The mains laid down during 1896–97 are distinguished from those previously laid. It would have added to the utility of the map could the position of the hydrants have been shown.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6982 births and 3643 deaths were registered during the week ending June 11th. The annual rate of mortality in these towns, which had increased in the three preceding weeks from 16·4 to 16·8 per 1000, further rose last week to 16·9. In London the rate was 16·3 per 1000, while it averaged 17·3 in the thirty-two provincial towns. The lowest rates in these towns were 8·4 in Croydon, 10·3 in Norwich, 11·1 in Brighton, and 12·2 in Hull; the highest rates were 20·3 in Manchester, 20·4 in Liverpool, 23·6 in Sunderland, and 24·1 in Newcastle-upon-Tyne. The 3643 deaths included 380 which were referred to the principal zymotic diseases, against 400 and 389 in the two preceding weeks; of these, 131 resulted from measles, 103 from whooping-cough, 57 from diarrhœa, 42 from diphtheria, 27 from scarlet fever, and 20 from "fever" (principally enteric). No death from any of these diseases was recorded last week in Croydon or in Burnley; in the other towns they caused the lowest death-rates in Portsmouth, Swansea, and Bolton, and the highest rates in Liverpool, Manchester, Salford, and Gateshead. The greatest mortality from measles occurred in Bradford, Salford, and Newcastle-upon-Tyne; from scarlet fever in Gateshead; and from whooping-cough in Salford, Gateshead, and Newcastle-upon-Tyne. The mortality from "fever" showed no marked excess in any of the large towns. The 42 deaths from diphtheria

included 23 in London, 3 in Cardiff, 3 in Birmingham, and 2 each in West Ham, Sheffield, and Hull. No fatal case of small-pox was registered last week in any of the thirty-three large towns, and only one case of small-pox was under treatment in the Metropolitan Asylums Hospitals on Saturday last, June 11th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on the same date was 2169, against 2241, 2195, and 2207 on the three preceding Saturdays; 206 new cases were admitted during the week, against 223, 258, and 220 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 216 and 226 in the two preceding weeks, declined to 212 last week, and were 32 below the corrected average. The causes of 34, or 0·9 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Leicester, Nottingham, Manchester, Leeds, and in fourteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, and Bradford.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had increased in the four preceding weeks from 19·8 to 23·0 per 1000, declined again to 21·3 during the week ending June 11th, but exceeded by 4·4 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 11·6 in Leith and 13·3 in Aberdeen to 23·3 in Glasgow and 24·0 in Dundee. The 642 deaths in these towns included 43 which were referred to whooping-cough, 42 to measles, 18 to diarrhœa, 8 to "fever," 4 to scarlet fever, and 1 to diphtheria. In all, 116 deaths resulted from these principal zymotic diseases, against 91 and 112 in the two preceding weeks. These 116 deaths were equal to an annual rate of 3·8 per 1000, which was 2·0 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had been 31 and 43 in the two preceding weeks, were again 43 last week, and included 27 in Glasgow, 7 in Paisley, and 4 in Dundee. The deaths from measles, which had increased from 27 to 34 in the three preceding weeks, further rose to 42 last week, of which 19 occurred in Glasgow, 13 in Dundee, 5 in Edinburgh, and 3 in Paisley. The deaths referred to different forms of "fever," which had been 13 and 6 in the two preceding weeks, rose again to 8 last week, of which 4 occurred in Glasgow. The deaths from diseases of the respiratory organs in these towns, which had been 125 and 133 in the two preceding weeks, declined to 109 last week, and were within one of the number in the corresponding period of last year. The causes of 33, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had declined in the three preceding weeks from 24·0 to 19·7 per 1000, rose again to 25·1 during the week ending June 11th. During the four weeks ending on Saturday last the death-rate in the city has averaged 23·0 per 1000, the rate during the same period being 16·0 in London and 20·6 in Edinburgh. The 168 deaths registered in Dublin during the week under notice showed an increase of 36 upon the number in the preceding week, and included 4 which were referred to the principal zymotic diseases, against 14 and 10 in the two preceding weeks; of these, 2 resulted from whooping-cough, 1 from "fever," and 1 from diarrhœa, and not one from small-pox, measles, scarlet fever, or diphtheria. These 4 deaths were equal to an annual rate of 0·6 per 1000, the zymotic death-rate during the same period being 2·1 in London and 2·6 in Edinburgh. The deaths referred to whooping-cough, which had increased from 1 to 5 in the three preceding weeks, fell again to 2 last week. The mortality from "fever" showed a further decline from that recorded in recent weeks. The 168 deaths in Dublin last week included 27 of infants under one year of age and 52 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons exceeded those recorded in the preceding week. Six inquest cases and 2 deaths from violence were registered; and 70, or more than a third, of the deaths occurred in public institutions. The causes of 6, or nearly 4 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING MAY, 1898.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality during May in each of the forty-three sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis last month, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to 7·2 per 1000 of the population, estimated at 4,504,766 persons in the middle of this year. In the three preceding months the rates had been 7·8, 7·4, and 7·1 per 1000 respectively. No notifiable case of infectious disease was recorded during May in St. Olave Southwark; in the other sanitary areas they caused the lowest rates in St. Marylebone, St. Pancras, St. Giles, St. Martin-in-the-Fields, Strand, Holborn, Woolwich, and Plumstead; and the highest rates in Fulham, Chelsea, Hampstead, Hackney, City of London, St. George-in-the-East, Newington, and Battersea. Only 1 case of small-pox was notified in London during May, against 3 and 4 in the two preceding months; this case occurred in Bermondsey sanitary area. No small-pox patients were under treatment during last month in any of the Metropolitan Asylums Hospitals. The prevalence of scarlet fever in London almost corresponded with that recorded in the preceding month; among the various sanitary areas this disease showed the highest proportional prevalence in Fulham, Hampstead, Stoke Newington, Hackney, Clerkenwell, St. George Southwark, Newington, and Battersea. The Metropolitan Asylums Hospitals contained 2147 scarlet fever patients at the end of May, against 2640, 2358, and 2270 at the end of the three preceding months; the weekly admissions averaged 223, against 214, 208, and 218 in the three preceding months. The prevalence of diphtheria in London during May showed an increase upon that recorded in the preceding month; this disease was proportionately most prevalent in Chelsea, Westminster, Hackney, St. Luke, St. Saviour Southwark, and Lewisham sanitary areas. There were 917 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of May, against 1042, 1009, and 923 at the end of the three preceding months; the weekly admissions averaged 134, against 140, 129, and 111 in the three preceding months. The prevalence of enteric fever in London during May showed a further marked decline from that recorded in recent months; among the various sanitary areas this disease showed the highest proportional prevalence in St. Martin-in-the-Fields and St. George-in-the-East. The Metropolitan Asylums Hospitals contained 54 enteric fever patients at the end of May, against 84, 64, and 59 at the end of the three preceding months; the weekly admissions averaged 8, against 12 in each of the two preceding months. Erysipelas was proportionally most prevalent in Hackney, St. Luke, Bethnal Green, Whitechapel, and Rotherhithe sanitary areas. The 12 cases of puerperal fever notified in London during May showed a marked decline from those recorded in any recent month, and included 2 in Whitechapel and 2 in Wandsworth sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the institutions of London having been distributed among the various sanitary areas in which the patients had previously resided. During the four weeks ending Saturday, May 28th, the deaths of 5419 persons belonging to London were registered, equal to an annual rate of 15·7 per 1000, against 21·4, 20·8, and 18·1 in the three preceding months. The lowest death-rates in the various sanitary areas were 9·4 in Hampstead, 12·7 in Battersea, 12·8 in Stoke Newington, 13·2 in Hackney, 13·3 in Camberwell, and 13·5 in St. James Westminster; the highest rates were 20·8 in Holborn, 21·1 in City of London and in Woolwich, 21·3 in St. George-in-the-East and in St. George Southwark, 21·8 in Strand, 23·2 in St. Luke, and 26·6 in St. Olave Southwark. During the four weeks of May 745 deaths were referred to the principal zymotic diseases in London; of these, 329 resulted from measles, 204 from whooping-cough, 104 from diphtheria, 47 from diarrhœa, 43 from scarlet fever, 18 from enteric fever, and not one either from small-pox, typhus, or any ill-defined form of continued fever. These 745 deaths were equal to an annual rate of 2·2 per

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING MAY, 1898.

(Specially compiled for THE LANCET.)

Sanitary Areas.	Estimated population in the middle of 1898.	Notified Cases of Infectious Diseases.											Deaths from Principal Infectious Diseases.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,504,766	1	1223	811	1	93	6	12	349	1	2497	7·2	—	329	43	104	204	—	18	—	47	745	2·2	5419	15·7	127
West Districts.																										
Paddington	127,480	—	26	21	—	1	—	—	7	—	55	5·6	—	15	—	2	1	—	—	—	1	19	1·9	138	14·1	134
Kensington	172,174	—	39	28	—	9	1	—	14	—	91	6·9	—	18	5	3	6	—	1	—	1	34	2·6	212	16·0	118
Hammersmith	107,370	—	33	10	—	3	1	—	2	—	49	6·0	—	13	1	—	2	—	—	—	—	16	1·9	127	15·4	127
Fulham	125,275	—	60	29	—	2	—	1	6	—	98	10·2	—	1	3	3	10	—	1	—	3	21	2·2	153	15·9	131
Chelsea	96,713	—	22	38	—	1	1	—	6	—	68	9·2	—	19	2	5	2	—	—	—	1	29	3·9	140	18·9	176
St. George Hanover-square	80,608	—	25	8	—	1	—	—	4	—	38	6·1	—	1	—	—	3	—	1	—	1	6	1·0	85	13·7	84
Westminster	52,574	—	10	22	—	1	—	—	3	—	36	8·9	—	6	—	2	3	—	—	—	—	11	2·7	66	16·4	158
St. James Westminster	22,200	—	4	4	—	1	—	—	2	—	11	6·5	—	1	—	—	—	—	—	—	—	1	0·6	25	13·6	111
North Districts.																										
Marylebone	140,483	—	15	21	—	6	—	—	13	—	55	5·1	—	40	—	2	3	—	2	—	2	49	4·5	199	18·5	160
Hampstead	78,755	—	41	9	—	2	—	—	6	—	58	9·6	—	—	—	3	1	—	—	—	1	5	0·8	57	9·4	72
St. Pancras	243,416	—	61	25	—	5	—	1	21	—	103	5·5	—	14	—	6	15	—	1	—	—	36	1·9	308	16·5	118
Islington	344,616	—	97	28	—	2	—	1	23	—	161	6·1	—	20	2	6	16	—	1	—	2	47	1·8	371	14·0	103
Stoke Newington	34,660	—	13	4	—	—	—	—	1	—	18	6·8	—	—	1	—	1	—	—	—	—	2	0·8	34	12·8	129
Hackney	219,630	—	91	79	—	2	—	—	30	—	202	12·0	—	10	4	5	7	—	1	—	1	28	1·7	223	13·2	116
Central Districts.																										
St. Giles	37,519	—	4	2	—	2	—	—	3	—	11	3·8	—	6	—	—	1	—	1	—	—	8	2·8	56	19·5	147
St. Martin-in-the-Fields	12,424	—	1	1	—	3	—	—	—	—	5	5·2	—	—	—	—	—	—	—	—	—	—	—	16	16·8	83
Strand	23,284	—	3	1	—	—	—	—	—	—	4	2·2	—	1	—	—	—	—	—	—	1	2	1·1	39	21·8	118
Holborn	30,066	—	5	4	—	—	—	—	2	—	11	4·8	—	5	1	—	1	—	—	—	—	7	3·0	48	20·8	116
Clerkenwell	66,120	—	24	14	—	—	—	—	3	—	41	8·1	—	7	1	1	3	—	—	—	1	13	2·6	102	20·1	186
St. Luke	41,076	—	10	11	—	—	—	—	5	—	26	8·3	—	3	1	6	1	—	—	—	1	12	3·8	73	23·2	157
City of London	29,088	—	8	6	—	—	—	—	3	—	17	7·6	—	2	—	1	—	—	—	—	—	3	1·5	47	21·1	171
East Districts.																										
Shoreditch	121,485	—	39	13	—	3	—	—	13	—	68	7·3	—	3	4	3	8	—	—	—	3	21	2·3	151	16·2	124
Bethnal Green	129,027	—	21	25	—	5	—	—	15	—	66	6·7	—	10	1	4	10	—	2	—	2	29	2·9	180	18·2	136
Whitechapel	80,259	—	26	13	—	1	—	2	10	—	52	8·4	—	3	—	3	2	—	—	—	2	10	1·6	90	14·6	90
St. George-in-the-East	48,241	—	13	11	—	8	—	—	3	—	35	9·4	—	2	—	2	3	—	—	—	1	8	2·2	79	21·3	129
Limehouse	58,661	—	15	7	—	2	—	—	5	—	29	6·4	—	3	—	2	3	—	—	—	1	14	3·1	90	20·0	175
Mile End Old Town	112,528	—	33	18	—	—	—	1	12	—	64	7·4	—	7	—	1	11	—	—	—	—	19	2·2	138	16·0	125
Poplar	170,220	—	40	36	—	2	2	—	17	—	97	7·4	—	6	3	7	6	—	—	—	3	25	1·9	220	16·8	124
South Districts.																										
St. Saviour Southwark	24,562	—	4	7	—	—	—	—	3	—	14	7·4	—	1	—	1	4	—	—	—	—	6	3·2	34	18·0	240
St. George Southwark	60,466	—	22	9	—	1	1	—	3	—	36	7·8	—	1	4	1	4	—	—	—	1	11	2·4	99	21·3	151
Newington	123,183	—	60	24	—	1	—	—	10	—	95	9·9	—	4	2	3	—	—	—	—	3	12	1·3	141	14·9	84
St. Olave Southwark	11,288	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	3	—	—	—	—	4	4·6	23	26·6	238
Bermondsey	85,738	1	27	5	—	—	—	—	6	—	39	5·9	—	5	1	—	5	—	—	—	1	12	1·8	109	16·6	153
Rotherhithe	40,849	—	9	1	—	—	—	—	9	—	19	6·1	—	7	1	—	—	—	—	—	—	8	2·6	65	20·7	178
Lambeth	304,073	—	78	41	—	7	—	1	18	—	145	6·2	—	13	1	4	22	—	—	—	1	41	1·8	343	14·7	130
Battersea	171,921	—	69	42	—	4	—	—	7	—	122	9·3	—	13	—	9	4	—	—	—	—	26	2·0	168	12·7	130
Wandsworth	202,526	—	64	35	—	3	—	2	21	—	115	7·4	—	11	1	4	13	—	1	—	4	34	2·2	211	13·6	102
Camberwell	261,189	—	66	58	—	6	—	—	18	—	138	6·9	—	11	—	5	8	—	2	—	2	28	1·4	266	13·3	115
Greenwich	180,441	—	38	35	1	8	—	1	17	—	100	7·2	—	18	1	1	14	—	4	—	3	41	3·0	2·9	16·8	136
Lewisham (excluding Penge)	88,562	—	10	36	—	—	—	—	4	—	50	7·4	—	7	1	6	2	—	—	—	2	18	2·6	94	13·8	134
Woolwich...	41,478	—	4	6	—	—	—	1	2	—	13	4·1	—	2	—	2	3	—	—	—	—	7	2·2	67	21·1	169
Lee	39,717	—	12	8	—	—	—	—	—	—	20	6·6	—	1	1	—	2	—	—	—	1	5	1·6	42	13·8	213
Plumstead	62,531	—	11	6	—	—	—	1	2	1	21	4·4	—	13	1	1	1	—	—	—	1	17	3·5	73	15·2	92
Port of London	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 21 cases of membranous croup.

† Including deaths from membranous croup.

1000; no fatal case of any of these diseases was registered during the month under notice in St. Martin-in-the-Fields; in the other sanitary areas they caused the lowest death-rates in St. George Hanover-square, St. James Westminster, Hampstead, Stoke Newington, Strand, City of London, and Newington; and the highest rates in Chelsea, St. Marylebone, St. Luke, Limehouse, St. Saviour Southwark, St. Olave Southwark, and Plumstead. The 329 fatal cases of measles were 37 above the corrected average number in the corresponding periods of the ten preceding years; this disease showed the highest proportional fatality in Chelsea, Marylebone, St. Giles, Holborn, Limehouse, Rotherhithe, and Plumstead sanitary areas. The 43 deaths from scarlet fever were 23 below the corrected average number; the mortality from this disease was highest in Shoreditch and St. George Southwark sanitary areas. The 104 fatal cases of diphtheria were 39 below the corrected average number; among the various sanitary areas this disease showed the highest proportional fatality in Chelsea, Hampstead, St. Luke, Poplar, and Lewisham. The 204 deaths from whooping-cough were 39 below the corrected average number; the mortality from this disease was highest in Fulham, Bethnal Green, Mile End Old Town, St. Saviour Southwark, and St. Olave Southwark sanitary areas. The 18 fatal cases of enteric fever were 17 below the corrected average number; the mortality from this disease last month showed no marked excess in any of the sanitary areas. The 47 deaths from diarrhœa were 16 below the corrected average. In conclusion, it may be stated that the aggregate mortality in London last month from these principal zymotic diseases was 12 per cent. below the average, the deaths from each of the diseases except measles being below the average.

Infant mortality in London, measured by the proportion of deaths of children under one year of age to registered births, was last month equal to 127 per 1000. Among the various sanitary areas the lowest rates of infant mortality were recorded in St. George Hanover-square, Hampstead, St. Martin-in-the-Fields, Whitechapel, Newington, and Plumstead; and the highest rates in Chelsea, Clerkenwell, Limehouse, St. Saviour Southwark, St. Olave Southwark, Rotherhithe, and Lee.

THE SERVICES.

NAVAL MEDICAL SERVICE.

STAFF-SURGEON FRANCIS AUSTEN JEANS has been promoted to the rank of Fleet-Surgeon in Her Majesty's Fleet.

ARMY MEDICAL STAFF.

Surgeon-Lieutenant O'Gorman is transferred from Aldershot to Dublin for duty. Surgeon-Major Forman is posted to the Station Hospital, Western Heights, Dover, for duty. Surgeon-Major Pike has assumed Medical Charge of the District Staff, Army Pay Department, Fire Brigade, Military Police, Model School, women and children, and Hospital for Soldiers' Wives, Aldershot. Surgeon-Major McCormack and Surgeon-Captain Kelly hold themselves in readiness for service in Egypt next month. Surgeon-Captain Beach has joined at Woolwich for duty. Surgeon-Captain Thomson is held in readiness for service in Egypt.

INDIA AND THE INDIAN MEDICAL SERVICES.

Surgeon-Captain Hore (Bengal) is appointed to officiate as Residency Surgeon in the Persian Gulf until further orders. Surgeon-Captain Stevens is appointed Resident Medical Officer of the Medical College Hospital at Calcutta, and is also appointed to act as Professor of Physiology, Medical College Hospital, Calcutta, during the absence on furlough of Brigade-Surgeon-Lieutenant-Colonel D. D. Cunningham, C.I.E.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain J. W. T. Gilbert to be Surgeon-Major.

VOLUNTEER CORPS.

Rifle: 5th (the Hay Tor) Volunteer Battalion the Devonshire Regiment: Surgeon-Lieutenant W. H. Webb to be Surgeon-Captain. 1st (Brecknockshire) Volunteer Battalion the South Wales Borderers: The surname of the medical officer hitherto described as Brigade-Surgeon-Lieutenant-Colonel Shrimpshire is Skrimshire. 2nd (Berwickshire) Volunteer Battalion the King's Own Scottish Borderers: Surgeon-Lieutenant J. McWatt, M.B. Edin., resigns his commission. 6th Volunteer Battalion, the Manchester Regiment: Surgeon-Major T. Fort to be Surgeon-Lieutenant-Colonel.

THE SPANISH-AMERICAN WAR.

We said quite recently that the war was fast approaching its most critical stage and that everything depended upon the nature of the measures adopted at the present time whether it was soon to be within measurable distance of its end or not. There has since then been much to chronicle, but there is the same perplexing difficulty in trying to separate fact from fiction or mere rumour in the intelligence which has been received. The exaggerated accounts, too, of the fighting, when compared with the results, are often ludicrous. We think the following may, however, be taken as representing a fairly reliable, or highly probable, view of the position. Admiral Cervera's fleet is at Santiago. Lieutenant Hobson, belonging to the Construction Department of the United States Navy, and his crew on board the *Merrimac*, by a very bold and daring act of bravery executed with rare skill and coolness, have succeeded in sinking that vessel pretty fairly athwart the throat of the channel to the harbour—in other words, the Spanish fleet is "bottled up" there. We are glad to notice that the Americans have fully recognised, by the way, the chivalric generosity displayed by Admiral Cervera on the occasion in question, which may hereafter prove very useful to Spain when the terms of peace have to be settled. A large invading force is reported to have left America for Cuba for the capture of Santiago. It seems certain, moreover, that Santiago has been again bombarded by the American fleet. In the Philippines it is alleged that the insurgents have nearly surrounded Manila and have on several occasions defeated the Spanish troops in their encounters with them. As regards the Cadiz squadron the news is as conflicting and contradictory as it was a short time ago in regard to Admiral Cervera's fleet, but it is most probable that the Cadiz fleet is still there or somewhere in the vicinity. The most curious thing about the war, which was long foreseen as probable, is that neither side was prepared for it and that Spain in particular seems to have done little or nothing with the forces—naval or military—at her disposal. The description of the hospital arrangements at Key West (published in the *Standard* of June 7th from its special correspondent with the army at Tampa) does not give a favourable account of them. The choice of Key West was no doubt forced upon the Americans from its geographical position, but it is in most respects a very unsuitable climate and locality for the accommodation of sick and wounded soldiers, and much remains to be done before even the best that can be practically made of it has been attained. According to the descriptions that have been given of the United States hospital ship *Solace*, commissioned with Admiral Sampson's fleet, it must be a very fine floating hospital. It flies a Geneva Cross flag and carries no arms or weapons of war. It has a number of launches for rescuing the crews of vessels sunk in action. The equipment of the *Solace* is very elaborate and complete: lifts, ice-making machinery, operating rooms, pharmacy, means of disinfection, and all the latest surgical and scientific appliances. The medical and nursing staff on board is upon an ample scale.

APOTHECARIES IN THE FRENCH ARMY.

The new Cadre of the French Army Medical Service provides for 115 apothecaries, in addition to the 1457 medical officers whose grading was recently mentioned in this column.[1] The apothecaries are graded as follows: Inspector, 1; principal apothecaries of the first and second class, 4 and 5 respectively; apothecary-majors of the first and second class, 30 and 45 respectively; assistant apothecary-majors of the first and second class, 20 and 10 respectively. The next examination for admission to the service, whether as medical officer or apothecary, is to take place next December. All candidates must be born or naturalised Frenchmen, not less than twenty-six years of age, and possessing diplomas as doctors of medicine or first-class apothecaries. They must also produce certificates of aptitude for military service granted by officers of not lower rank than surgeon-major, and be prepared to sign an agreement to serve with the colours for at least six years after gaining their first step.

A MEDICAL HERO.

The Cross of the Legion of Honour has been conferred upon Dr. Abbatucci, a French naval surgeon, for gallant conduct under circumstances which recall the brave conduct in the New Zealand war of two officers of the Army Medical

[1] THE LANCET, May 7th, 1898, p. 1283.

Department — Surgeon-General Mouat, V.C., and the late Surgeon-General (afterwards Director-General) Mackinnon.[2] The description of Dr. Abbatucci's exploit in the *Journal Officiel* runs as follows: "In the affair at Diagouron (Soudan) he not only distinguished himself by attending to the wounded under fire, but also took a prominent part in repelling the enemy, with his own hands keeping up a well-directed rifle fire in order to encourage by his example a section of *tirailleurs*, and subsequently doing gunner's duty for an officer of artillery whose men for the most part were *hors de combat*."

THE COMMANDER-IN-CHIEF.

The rumour that Lord Wolseley had been offered the appointment of the Governor-Generalship of Canada and that he might possibly be induced to accept a less arduous post than that which he at present holds seems to have obtained some credence. Nothing definite is really known, however, as to the truth or otherwise of this rumour. It is very naturally surmised that in case of Lord Wolseley's retirement he would be succeeded in his present post by Lord Roberts and that the Duke of Connaught would command the Forces in Ireland and Sir Redvers Buller would take over the Aldershot command. It was also rumoured some time ago that Lord Wolseley's health was not so good as it has hitherto always been. We should be sorry if this were so, but from his lordship's frequent appearances in public of late it certainly would not seem to be the case.

THE PARKES MEMORIAL PRIZE.

This prize, which was founded in memory of the late Professor Parkes, is awarded triennially and consists of 75 guineas in money and a bronze medal. The competition is open to all medical officers of the Army, Navy, and Indian services of executive rank on full pay. The assessors, Dr. Arthur Ransome, Dr. James Niven, and Professor Sheridan Delépine, have awarded the prize this year to Surgeon-Captain Fred. Smith of the Army Medical Staff, while stating that Staff-Surgeon W. W. Pugh, R.N., and Surgeon-Lieutenant-Colonel Andrew Duncan, I.M.S., contributed essays of great merit. The subject of Surgeon-Captain Smith's prize essay was "The Etiology, Prevalence, and Prevention of Diphtheria."

ROYAL VICTORIA HOSPITAL, NETLEY.

The under-mentioned officers, who since passing through the School at Aldershot have been serving in the Surgical Division of the Royal Victoria Hospital, Netley, are ordered to hold themselves in readiness to proceed to Egypt: Surgeon-Lieutenant P. McKessack, M.B. Aberd., and Surgeon-Lieutenant J. McD. McCarthy. The number of patients in the Royal Victoria Hospital is now reduced to about 650.

DEATHS IN THE SERVICES.

Brigade-Surgeon-Lieutenant-Colonel William Alexander Barren, on June 8th, in his 49th year. He served with the Bombay Sappers and Miners in the Afghan War of 1880 and was in medical charge of the 4th Bombay Native Infantry (medal). He also took part in the Burmese Expedition of 1886–88 (medal with two clasps).

[2] See THE LANCET, Nov. 20th, 1897, p. 1349.

MEDICAL GUILD AT CARDIFF. — At a recent meeting of members of the medical profession in Cardiff it was decided to establish a medical guild similar to the one existing at Manchester.

THE CHEMISTS' EXHIBITION, 1898.—This exhibition, now an annual event, has become deservedly popular, having developed into a well-arranged display of interesting exhibits so large as to need the commodious area afforded by the Agricultural Hall. We noticed that all the leading and conspicuously enterprising firms were represented and most of them found excellent materials in the manifold drugs, chemical preparations, &c., to form a decidedly artistic and attractive exhibition. Pharmacy was chiefly in evidence, but not exclusively, as instanced in the assortment of sanitary appliances, food and food products, photographic requisites and new developments, dental apparatus, and a great variety of advertising devices. In short, the exhibition is a success and receives support from the most reputable quarters. Last year some 25,580 persons attended and there is every reason for believing that this year that number will be largely exceeded.

Correspondence.

"Audi alteram partem."

THE ST. NEOTS CASE OF POISONING BY STRYCHNINE: AN INSTRUCTIVE CASE.

To the Editors of THE LANCET.

SIRS,—May I invite attention to one very instructive point in the history of this case? No one who has made a study of forensic medicine can fail to concur in the admirable summing up of Mr. Justice Hawkins or in your leading article on the case. But the point which it is especially desirable to emphasise is the bearing upon experimental science. The first point in the trial was to establish the fact that the victim died by poisoning and by what poison. How was this fundamental point proved? Dr. Thomas Stevenson, scientific analyst to the Home Office, stated first that he found strychnine in all the organs he removed from the body. He arrived at the conclusion that death was due to poison by means of the approved chemical tests, and also by *physiological tests — i.e., he gave some of the poison to animals.* What will the anti-vivisection bigots say to this application of experimental science to the aid of justice? Of course, it is hopeless folly to reason with minds possessed of one idea. But a case of this kind deserves special record for the benefit of mankind and the sound administration of justice. But this is not all. The enormous quantity of strychnine administered in this case defied successful treatment. Experiment, however, has proved that poisoning by such a dose of strychnine as would be sufficient to kill may be successfully treated. I have always looked back upon my work with Marshall Hall as one of the most fortunate and instructive events in my career. I assisted him in the following experiments. A frog was poisoned by subcutaneous injection of strychnine. If left in a state of perfect quiescence no convulsion occurred and it recovered. But another frog treated with the same dose suffered attacks of convulsion by simply shaking the table on which it rested or by irritating the skin and the repeated provocation of convulsive fits ended in its death.

Now what is the practical lesson dictated by this experiment? It teaches how to treat convulsion. Absolute rest is the first condition. Observing this rule, I have several times rescued women suffering from albuminuric convulsions by close watching and making them inhale chloroform or nitrite of amyl on the first sign of approaching convulsion. The recurrence of convulsive fits is a main factor in causing the death. The repeated shocks to the nervous centres exhaust and paralyse the nervous power. Avoid these shocks and the first cause of the nervous distress may be eliminated. I have had one striking example of this truth in a case of poisoning by strychnine. An officer in the army given to the free use of alcohol and repudiating heel-taps, swallowed in one draught a bottle of physic containing one grain of strychnine. The direction was to take a sixth part twice a day. He was seized with violent characteristic convulsions. Fortunately I was at hand. I immediately put him under chloroform and put him under the care of an assistant, who assiduously watched him, making him inhale the anæsthetic whenever nervous disturbance threatened. This was continued for the whole night. Next day the poison had been eliminated and he recovered. Here, then, is clear evidence of the value of experimental physiology in the saving of human life. Is the sacrifice of a frog to be regarded as sinful when applied to the saving of human life? What can be said for the sportsman who shoots a bird for mere sport or for the butcher who kills a sheep to find us food?

I am, Sirs, yours faithfully,

June 13th, 1898. ROBERT BARNES.

"GENU RECURVATUM."

To the Editors of THE LANCET.

SIRS,—Dr. Taylor's case of genu recurvatum (described in THE LANCET of June 11th) with delayed development of the patellæ is instructive as showing the tendency to spontaneous cure which this deformity so often evinces. Even extreme cases may recover practically without treatment.

For instance in Hilton's case,[1] the patient who had first walked on the condyles of her femurs with the legs directed horizontally forward and usually fell asleep sucking one of her own big toes, recovery was complete at the age of twenty-seven years. No doubt the cure in this case would have been much hastened by proper treatment by splints and massage. The immediate cause of the deformity appears to be deficient development of the tendon of the quadriceps extensor. Whether this is primary or secondary to malposition *in utero* is, like the etiology of the often accompanying club-foot, a disputed question and one which does not much affect treatment. Dr. Taylor and others have noted deficiency of liquor amnii, but on the other hand, hydramnios has often been recorded in such cases. Genu recurvatum is almost invariably present in cases of absence of patella, on which I wrote in THE LANCET of Sept. 25th, 1897. The treatment which I adopted and then described in your columns has generally proved successful in the hands of others as well as myself. It consists in promoting flexion by manipulations and splints and in preventing the recurrence of hyperextension by the latter means. The development of the tendon and of the patella may be encouraged by massage of the front of the knee and thigh. Whether such means would have been successful in such an exceptional case as that described by Mr. Sheild may well be doubted. Probably section of the tendon and capsule as practised by Mr. Edmund Owen would have been necessary.

It seems likely that this and some other deformities of the knees are much less rare than has been generally supposed and that they have either been overlooked when slight or else were not formerly thought worth recording. Thus as regards absence of the patella, a year ago, when my paper was written, I was only able to find records of 42 cases, but since that time I have collected notes of five more cases from contemporary medical journals.

I am, Sirs, yours faithfully,

Seymour-street, W., June 11th, 1898. E. MUIRHEAD LITTLE.

A QUESTION OF DIAGNOSIS.

To the Editors of THE LANCET.

SIRS,—Recently I was called to see some cases where there was doubt as to the true nature of the disease. There were four children all of whom had sore-throat and one a rash somewhat like a scarlet fever rash but more dusky than it usually appears in that disease. On inspecting the throats I found a limited amount of exudation membrane, but one child had croupous breathing and running at the nostrils. The temperature was not above 102° F. I considered all the cases to be diphtheritic. The practitioner who called me in—a gentleman of much experience—was of the same opinion and as the patients were all in one small room which was shared by other members of the family he sent the necessary notifications direct to the hospital to ensure their early removal, the town-hall being by that time closed for the day. Receiving notice that the medical officer at the hospital had notified these cases as scarlet fever I saw our medical officer of health and told him that I still looked upon them as cases of diphtheria. He told me that one child had since died, the cause of death being given as scarlet fever and "septic" sore-throat, but he could give me no information as to the means which had been taken at the hospital to verify this diagnosis. It has occurred to me that it would be well if in connexion with the sanitary department of every important district there could be facilities afforded for making cultivations of membranes, &c., so that points of such vital importance might be cleared up without delay. In connexion with this matter and while still in doubt as to the most important part of the case my notification certificates were returned to me with a note solemnly calling my attention to the fact that I had omitted to fill in the blanks to show whether Mary and John respectively were male or female! I am, Sirs, yours faithfully,

Kensington, June 8th, 1898. ALFRED E. BARRETT.

AN URGENT CASE.

To the Editors of THE LANCET.

SIRS,—We venture to bring a pitiable case to the notice of the medical profession. Mr. James McGregor Laing, a surgeon in the employment of the Coolie Emigration Service, died in Calcutta on July 6th, 1889, leaving a widow and four children, a girl and three boys, totally unprovided for. Assisted by friends the widow took a boarding-house in Bayswater, but eventually failed to make ends meet. For the last few months she has lived in a small office in 16, Colville-road, W., a tiny place, without fireplace of any kind. The rent of this has been paid up to the end of this month by some generous Freemasons. She has tried to get dressmaking work and has not succeeded in doing so. Since her failure she has had grants of £10 and £12 from the British Medical Benevolent Fund, £10 from Grand Lodge, and small amounts from other Masonic lodges. Her children's ages are: the girl fourteen years, the boys twelve, eleven, and nine. The girl is at school, by the kindness of the teachers obtaining tuition without charge. The eldest boy has been elected into the Masonic School but is too ignorant to be admitted, the second is a candidate for Epsom. The boys go to the Westbourne Park Schools at present, helped to do so by the clergy of All Saints, Notting-hill. For a long time the providing of food for these hungry young mouths has been an intense anxiety to the mother; indeed, there actually has not been a sufficient supply of proper nourishment. Mrs. Laing will have to leave her present abode at the end of this month as she has no money to pay the rent.

We can personally guarantee the urgency of this poor lady and are desirous of placing her in a small shop to enable her to gain a living for herself and her children. We strongly recommend the case to the generous consideration of your readers. We shall be glad to receive any subscriptions or offers of help on Mrs. Laing's behalf.

We are, Sirs, yours faithfully,

J. PICKETT, M.D. St. And.,
26, Colville-square, W.
REGINALD HARTLEY, M.D. Durh.,
68, Porchester-terrace, W.

June 10th, 1898.

THE CATHOLICITY OF THE METROPOLITAN HOSPITAL SUNDAY FUND.

To the Editors of THE LANCET.

SIRS,—Referring to your special supplement circulated in the churches on Hospital Sunday, which is an excellent *résumé* of the position of medical charities, I beg to call your attention to the following statement in the closing sentence of the paragraph on the Prince of Wales's Hospital Fund: "The objects of *each* fund are the same." You may not be aware of the fact that dispensaries and other medical charities are *entirely excluded* from any benefit from the Prince of Wales's Hospital Fund; only hospitals *pure and simple* get grants. The Sunday and Saturday Funds benefit all medical institutions that are willing to conform to certain regulations made by the committee of the funds. I am a director of, and much interested in, the Marylebone Dispensary, 77, Welbeck-street, W., and regret to find that this institution is excluded from any benefit from the Prince of Wales's Fund, *not* being a hospital. I am certain we are losers by this new fund, as subscribers to it, in many cases I know, thought we would get our share at the Marylebone Dispensary and have therefore not given as formerly.

In the interest of charity I think this point ought to be clearly stated in favour of the Sunday Fund as distinct from the Prince of Wales's Fund in all future appeals.

I am, Sirs, yours faithfully,

GEORGE CUNNINGHAM.

Junior Athenæum Club, Piccadilly, W., June 13th, 1898.

THE COMING ELECTION TO THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editors of THE LANCET.

SIRS,—As the election for the Council of the College of Surgeons is approaching it seems reasonable that the electors should know the opinions of those for whom they are to vote. It has been urged that it is undignified for candidates for the Council to canvass for support on account of any special line of policy, as the selection depends rather on their professional eminence. Against this I would say that professional eminence by no means implies sound medical policy, as recent meetings of the General Medical Council have very clearly shown, nor do candidates for any other responsible position expect to be elected without some

[1] Lectures on Rest and Pain, THE LANCET, vol. ii., 1862, p. 497.

general indication of the line of policy which they intend to pursue. The Council of the College of Surgeons is far too much under the control of the large London schools, and until this domination is broken there will be no reasonable reform. It is no sufficient guarantee of the fitness of a candidate for the Council that he is a junior member of a London hospital and may find employment on the examining board of the College. As to the existing members, they have remained silent when they should have protested and it is time that things were a little improved. The Government of the day is expected to defend its actions in terms which its outside constituents can understand and it is inconceivable that any elected body except the College of Surgeons' Council should treat its electors in the contemptuous manner which this body has always assumed. As some points on which I would be glad to bear the opinion of candidates I may mention the following: the defence of the rights of Fellows and Members of the College, the performance of the ethical parts of its duties, and the restitution to the corporation of its lawful right to elect a representative on the General Medical Council.

I am, Sirs, yours faithfully,

June 14th, 1898. F.R.C.S.

A CASE OF SEPARATION OF THE LOWER EPIPHYSIS OF THE FIBULA.

To the Editors of THE LANCET.

SIRS,—On June 13th I was called to a boy who had fallen from a horizontal bar. I found a compound separation of the lower fibular epiphysis. Diagnosis was easy owing to the compound nature of the injury. The separation was through the cartilaginous zone. The foot was inverted. The lower end of the diaphysis protruded and its skin covering was tightly tucked in for a good inch beneath it. A single case only is on record in Mr. Pick's book on fractures, which makes the present one worth mentioning.

I am, Sirs, yours faithfully,

J. E. S. BARNETT, F.R.C.S. Eng.

Kingston-hill, June 14th, 1898.

"THE ALLEGED DEARTH OF QUALIFIED ASSISTANTS."

To the Editors of THE LANCET.

SIRS,—Probably the individual experience of medical practitioners as to the working of the regulations of the General Medical Council *re* unqualified assistants would be of some interest and may be of some use in gauging the far-reaching consequences of such action. In my district the effect so far has been that a stimulus has been given to the practice of midwifery by midwives and to unqualified practice on the part of chemists and herbalists. I am myself unable to obtain the services of a qualified assistant either by advertisement or through an agent, and as the services of an unqualified assistant are no longer available for midwifery work I am placed at a serious disadvantage in my competition with the midwives who have largely increased in numbers in my district. And the point I wish to emphasise is that one at least of them to my knowledge is taking pupils to enable her to get through her work. I should like to suggest that it is a great hardship to qualified medical men that we are not allowed to take midwifery pupils in the same way.

I am, Sirs, yours faithfully,

Bethnal-green, June 9th, 1898. A MEDICAL PRACTITIONER.

To the Editors of THE LANCET.

SIRS,—If it is generally true, as "A General Medical Practitioner" states, that there is now a great dearth of qualified assistants I think it is a fact on which the whole medical profession is to be congratulated and for which the General Medical Council should be heartily thanked. It proves that the sad state of congestion of a few years back was due not to the existence of too many qualified men but to the unfair competition of unqualified assistants, who were paid starvation wages and did work for which it is only reasonable to suppose they were unfitted while their employers took the fees. Why should a man undertake more work than he can perform and pay another to do part of it for him? The custom in the medical profession now is for one man who happens to be the senior in the town or district to take all the appointments he can, often at an absurd remuneration, and hire an assistant to do the work. While the assistant was unqualified it was simply a fraud on the public, and even now it is a dog-in-the-manger method of preventing any other man from making a living unless he is willing to become a paid servant liable to dismissal at the whim of his employer. I believe the whole profession would gain in every way if there were no more assistants, except as probationers with a view to partnership, and no man undertook more than he could perform. The well-established practitioner would then think twice before he took a Poor-law or club appointment at a price that would not pay for good drugs, and the public would gradually learn that if they want experienced men they must pay for them. The vicious system of keeping out another man at any price would be knocked on the head and your correspondent would find more reasonable fees a better protection against "the wolf" than any number of underpaid assistants.—I am, Sirs, yours faithfully,

June 11th, 1898. ANOTHER G.P.

TANGIER AS A HEALTH RESORT.

(FROM A SPECIAL CORRESPONDENT.)

FROM Cadiz I sailed for Tangier and thence to Gibraltar. My stay in Tangier was of short duration and I have not much to add to what I wrote concerning this place in the year 1887.[1] The climate, needless to say, remains the same. The prevailing winds are sea winds, the north-west, west, and south-west being from the Atlantic and more suitable to British constitutions than the Mediterranean winds which, with the land winds, alone prevail on the French and Italian Riviera health resorts. The only land wind at Tangier is from the due south and the heat and unpleasantness of this wind are mitigated because it has to pass over the eternal snow of the Atlas mountains before it can reach the town and neighbourhood. Also there is not so great a change of temperature at sunset as on the Riviera but, on the other hand, the atmosphere is more damp. The description I gave when last writing on this subject of the vegetation clearly proved the climatic advantages enjoyed at Tangier and the beneficial effects of the atmosphere were set forth by evidence collected at the hospitals and from the local practitioners. But, above all, Tangier stands out pre-eminent as the nearest and the safest place where a complete change can be enjoyed. The dread of European interference is so great that all crime is most rigorously dealt with, so that the visitor or patient is as safe at Tangier as in any part of Europe and yet the change is complete.

In 1887 I wrote that at Tangier there were "no regular roads, no carriages, no railways, no inland post, no municipality, no rates and taxes for Europeans to pay, no standing army or drilled troops, no daily newspaper, no public opinion, but, under the capitulations, thirteen Christian and one Mahomedan constitutions having the force of law." To-day the position of affairs has been somewhat modified, and this picture is no longer accurate in all its details. First of all a municipality has now been created. It originated some nine years ago in a voluntary association of European subscribers. This self-created constituency elected its representatives and contributed the necessary funds. The first work done was the repaving of those portions of the town where the Europeans reside. Then, with a view to opening out for building purposes the highlands or plateau to the west of the town known as the Marchand, a good carriage road was built from the town to this outlying, well-exposed, and healthy district. It is true that there are not yet any carriages, but the good road makes it easier to take up provisions and to ride backwards and forwards. This road is 7 metres wide and has proper supports. Then a main system of drainage was built outside the town which discharges through pipes into the sea at low-water level. The foreign ministers or consuls preside over the meetings of the municipality, which has acquired such influence that it has been able to obtain from the Sultan of Morocco the permission to control the slaughter-houses, and the charge made for the slaughtering of cattle has now become a source of municipal revenue. Efforts are being made to

[1] See THE LANCET, May 7th, 1887.

obtain a similar control over the markets, but this is opposed by the Spanish Embassy, for the Moor who has the concession for the markets from the Sultan is under Spanish protection. This summer it is proposed to pave the larger "soko" or market outside the town, so that the natives who bring up cattle shall no longer have to sleep on the mud and manure of this picturesque but very filthy place. With regard to medical services, the municipality keeps anti-diphtheritic serum in stock and has made arrangements for the gratuitous treatment of all sufferers. Then, when there were some cases of cholera at Tangier in 1895 a soup kitchen was organised by the ladies of the town, with Mrs. Ion Perdicaris as the lady president. A bazaar was held which brought in £400, and this is a very large sum for so small a town. The natives were not only supplied with soup but with clothes, seed, &c. These charitable efforts were not merely useful in relieving distress but they helped to prevent the spread of the epidemic. There are likewise religious and medical missions and recently an effort has been made to establish a chair for teaching surgery to the native Moors. Thus it will be seen that some progress has been achieved and that European methods have been introduced in spite of the resistance and conservative instincts of the Moors. A jealous vigilance, however, should be exercised lest all the special charm and attractiveness of Tangier be improved out of existence.

It is from the psychological point of view that Tangier is to be especially recommended for the treatment of certain diseases. A sojourn in that town ensures a complete change to the eye and to the mind. Everything is—or rather was—different from what the dweller in a western European city is accustomed to see and hear. The dress, features, customs of the Moors and other native populations, the appearance of their houses and streets, their means of transit, the pack saddles, the mules, the camels, the absence of conveyances on wheels, and of the ordinary rules which govern and regulate a town—all this seems so strange, so interesting and picturesque, that it provides the complete mental diversion and rest which prove so often highly beneficial to patients suffering from the strain of our overwrought civilisation. Unfortunately, Tangier is losing these most interesting and useful characteristics. A large number of commonplace, ugly Spanish houses have been built on the Marchand, and on the opposite side of the town outside the old walls there is an entire street of Spanish cottages and houses. Formerly, the beach was reached on this side by clambering down in the bed of the moat under the grey walls and battlements which defended the city. It was a rough but romantic walk. Now we find a paved, ugly, commonplace Spanish street. It is not worth while to take the slightest trouble to see such an inartistic thoroughfare. Then, again, a European hotel has been built in the centre of the town, spoiling by its shapelessness and utter absence of appropriateness or of artistic sense the Moorish and picturesque aspect of the main street. If this sort of improvement continues travellers will abandon Tangier and will frequent Tetuan or some other place as yet undesecrated by the ugliness of European progress. A European town will always be better built and more handsome in Europe than in the midst of a Moorish community in Africa. If people travel all the way to Morocco it is to see Moorish architecture and buildings and not bad reproductions of what they have left behind them in Europe. Nor will it tend to strengthen the cause of sanitary reform if the fact that some ameliorations have been introduced in the drainage or the markets of Tangier means that the beauty of the place is to be destroyed. The modern changes alluded to above will not alter the climatic advantages of Tangier, but they will do away with its special attractiveness as a town more Oriental in appearance than Constantinople. It will no longer be, as at present, a veritable haven for artists and a place where the invalid may combine the advantages of a change of climate with a complete change of surroundings. As yet the mischief has not gone too far, but it must not go any farther. There is no reason why new houses should not be built in keeping with the style and with the genius of the country, particularly as the small European houses which are springing up in all directions are not only utterly devoid of artistic taste and in complete discord with the surroundings but are also very unsuitable to the climate. With an artist of such repute and skill as Mr. Ion Perdicaris acting as one of the leading members of the Tangier municipality it should be possible to check the present tendency to spoil the beauty of the town.

Tangier.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Hospital for Women, Shaw-street.

DR. E. T. DAVIES, who has been an honorary assistant medical officer at the Shaw-street hospital since its formation in 1883, has sent in his resignation to the committee. Owing to the resignations of Dr. Davies and Dr. Smart and to the promotion of Dr. Gemmell to the senior staff the junior posts are all vacant. I understand that a radical change will be made in the *personnel* of the junior staff and I am also informed that the committee contemplate the appointment of a non-resident stipendiary medical officer who will perform the duties of an assistant medical officer and will also act as anæsthetist. These changes appear to carry the approval of the medical staff and probably are about to take place on their initiative.

Hospital Saturday Fund: Annual Street Collection.

The annual street collection by ladies on behalf of the local hospitals took place on Saturday, June 11th. Last year the amount collected in a similar way reached the total of £623. As far as is at present known the amount collected on Saturday has exceeded £690.

The Stanley Hospital: Anonymous Munificence.

An anonymous donor has presented through the Lord Mayor of Liverpool the sum of £2000 for the extensions contemplated by the committee of the Stanley Hospital. The Lord Mayor suggests that this generous gift should be utilised for the erection of the south wing of the hospital. By this means accommodation would be made for 60 beds and the overcrowding in the administrative block would be also relieved, while at the same time the capacity of the institution would be increased to 100 beds or more.

Workmen's Compensation Act, 1897: Appointment of Medical Referee.

The Home Secretary has appointed Mr. George G. Hamilton, F.R.C.S. Eng., medical referee under the Workmen's Compensation Act for the Liverpool County-court Circuit. The remuneration will be at the rate of 2 guineas for a first examination and report and 1 guinea for a further report on the same case. Three guineas will be paid for attendance at the county-court or other place to be arranged at the request of the judge. Additional fees will be paid for mileage when the distance exceeds two miles, at the rate of 5*s.* per mile. No fee under 1 guinea will be offered for any subsequent reference to a case under dispute. Mr. Hamilton was formerly honorary surgeon to the Liverpool Northern Hospital and is now assistant surgeon to the Liverpool Royal Infirmary. The practical surgical experience gained at those hospitals ought to be a sufficient guarantee of the competence of Mr. Hamilton for the duties of this most delicate and responsible post. The position is one which will require the exercise of a calm judgment and a mind unbiased and free from any taint of prejudice.

Bootle Town Council: A Medical Officer of Health's Claim.

The Bootle Council have decided to recoup Mr. James Pearson, their medical officer of health, for a portion of the expenses incurred by him owing to his recent illness, alleged to have been due to his inspection of certain foul privies in the borough. The sum of 50 guineas (which does not represent the total loss sustained by Mr. Pearson) was voted by the Council to their medical officer; at the same time they did not admit their legal liability in the matter.

June 14th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh University.

A REPRESENTATION was recently submitted to the Senatus of the University of Edinburgh by British practitioners of medicine in Italy requesting that the University should take steps to prevent if possible the passing of a law to prevent medical men with British qualifications from practising in Italy. The Senatus prepared a memorial in support of the existing conditions under which British graduates in medicine practise in Italy. This was submitted by the Scottish Office to the Foreign Office, from which a communication

has now been received to the effect that it has "been decided not to alter the existing law relative to foreign doctors in Italy," a decision which is in all respects satisfactory to many graduates of Edinburgh.

Faculty of Physicians and Surgeons, Glasgow.

At the June meeting of the Fellows Lord Lister was unanimously elected an honorary Fellow of the Faculty. The connexion of Lord Lister with the Glasgow school extends back to 1860, when he was appointed Professor of Surgery in the University and at that time he became an ordinary Fellow of the Faculty. It was in the Glasgow Royal Infirmary that the clinical basis of the modern practice of antiseptic surgery was laid and the recent action of the Faculty is a proclamation of their desire to do honour to one whose name they are proud to record upon their roll.

University College, Dundee.

A meeting of the council of the College was held on June 8th, when the Principal intimated that the Secretary for Scotland had paid over to the University of St. Andrews the grant for the year and all the arrears consigned to him by the Scottish University Commissioners. It is therefore probable that the appointments to the chairs necessary to complete the Medical School at Dundee will be made at an early date, in time to allow a full curriculum to be offered in the next winter session. The election to the new chairs is in the power of the University Court of St. Andrews. By the will of the late Mr. David Myles, C.A., the sum of £10,000 has been bequeathed to the College and £1000 to the Royal Infirmary, Dundee.

West of Scotland Consumptive Homes.

An anonymous donor has informed Mr. Quarrier that he is prepared to build the second block of the hospital for phthisical patients at Bridge of Weir, near Glasgow, at a cost of about £8000. The first of the hospitals has recently been opened. Whilst a policy which leaves so much responsibility in the hands of one man must always be open to criticism there can only be on the part of the profession a very earnest desire to see successfully in operation a scheme in which there appears to be so large a promise of practical good.

Medical Appointments.

Mr. J. F. Stevenson has been elected casualty surgeon to the St. Rollox police district, Glasgow, vice Dr. Glaister, resigned. At a recent meeting of the Glasgow City Parish Council the chairman referred in sympathetic terms to the death of Dr. Robert Orr, who had been one of the parochial medical officers for more than thirty years. Dr. Frederick Dittmar was elected to fill the vacancy.

June 15th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Death of Dr. Thomas Fitzpatrick of Dublin.

A VERY highly esteemed citizen of Dublin died on June 9th in the person of Dr. Thomas Fitzpatrick of Baggot-street. Dr. Fitzpatrick was in his ninety-second year, having graduated as M.D. of the University of Edinburgh in 1833, and become a Fellow of the Royal College of Physicians of Ireland in 1860. He was born in the county Meath in the early part of the century and was the eldest son of an eminent physician who practised there. As a medical student he had Graves and Stokes for his teachers and earned from them any prizes or distinctions in their power to bestow. He was engaged in practice in Dublin for nearly fifty years and was always highly trusted and respected. Any honours which the medical profession could offer him were at his disposal, but his habits were retiring and unostentatious. He was, however, elected not long ago to the list of Honorary Fellows of the Royal College of Physicians of Ireland of which he had been for so long a Fellow. Dr. Fitzpatrick's family were highly distinguished, his eldest surviving son being the present Sir Denis Fitzpatrick, lately Lieutenant-Governor of the Punjaub and now member of the Indian Council in London. The deceased physician's funeral was one of the most largely attended which has taken place in Ireland for many years.

Cork-street Fever Hospital, Dublin.

The managing committee of this hospital met in their board room on June 9th. The registrar reported that the admissions towards the end of May showed a considerable falling off, such as also took place during the corresponding period of last year, on both occasions the reduction being caused by the lessened prevalence of scarlet fever. Several cases of diphtheria were admitted, that dangerous affection having recently become more frequent in Dublin. Cases of enteric fever and of pneumonia were less frequent, while only one case of measles occurred. One case of typhus fever was admitted from a house which contributed several last year.

The Water-supply of Newtownards.

Dr. Clibborn, Local Government Board inspector, reports that the water-supply of Newtownards consists principally of pumps under circumstances which in the majority of cases must have unsatisfactory results. The sewerage is far from good, consisting principally of old flood sewers for county purposes and never meant for common sewers. He says that the sanitary authority should take into consideration in the first instance the providing of a good and sufficient supply of water for Newtownards. He points out that wells in towns must be liable to contamination from surface water drains and leakage from badly constructed sewers.

Portrush as a Health Resort.

The medical officer of health of Portrush, Dr. Martin, reports that the waterworks are in a satisfactory condition and the water free from pollution by sewage. The sewers have been very largely examined during the past winter and made right where defective, and during the past twelve months there have been no deaths from zymotic disease. The health of the town has been and is very good. This satisfactory report, presented to the monthly meeting of the Portrush Town Commissioners on June 7th, shows that this favourite seaside and golfing resort is in a most healthy condition.

The Belfast District Lunatic Asylum.

At the monthly meeting of the governors, held on June 13th, it was reported that a creamery had been fitted up at Purdysburn by which the institution was supplied with butter and milk without any additional cost or increase to the staff. There are 985 patients on the registers of the institution and Dr. Walter Smith, late Demonstrator of Anatomy at Queen's College, Belfast, has been appointed assistant medical superintendent, in succession to Mr. S. Graham, resigned.

Belfast Workhouse.

Mr. Agnew, the Local Government Board Inspector, in his report just issued, has drawn the attention of the ratepayers very markedly to the Belfast Workhouse. It would appear that owing to a reduction by the guardians of the rate estimate there will be an apparent deficit of £13,000 on March 25th, 1899, when the financial year ends, assuming that the grants in aid of local taxation are equal to those of last year. The guardians have increased their debt to the Belfast Bank for building purposes and other workhouse improvements by £4000 since the last report, so that the loans are now £23,000. But next year the guardians, when the new Local Government Board comes into force, will cease to be a rating authority; the corporation then as a county council will be vested with the sole power of making and collecting all the rates. Hence the only way by which the guardians can get out of their difficulty is to issue a supplementary rate to meet this threatened deficit. Further, Mr. Agnew says that the main infirmary building is overcrowded and in many of the wards there is insufficient cubic space for the sick. There is a want of lavatory and bathing accommodation for the healthy and infirm women, and the quality of the beef, as inspected by Mr. Agnew on two occasions in succession, was unsatisfactory. There is still a great scarcity of water in several portions of the workhouse. In the chief infirmary and in the convalescent wards the staff of nurses is insufficient both by night and by day, and of the 43 nurses only 5 are trained; of the remainder the large majority have only a few months' service. Mr. Agnew thinks that the nursing staff should be increased by the addition of 12 trained nurses and a few probationers. In the fever hospital the increase in the nursing staff has not been in proportion to the increased number of patients and 18 pauper inmates are employed more or less as attendants upon the sick, which is in violation of the Local Government Board's sealed order of Sept. 11th, 1897. Mr. Agnew recommends the guardians to appoint new attendants. At an inquiry held in the workhouse on June 2nd in reference to the discharge of an infant from the union infirmary who died some hours afterwards

at the residence of the parents Mr. Robert Hall, one of the visiting medical officers, stated that in his opinion the medical staff—by which he meant the resident and visiting medical officers—was not sufficient and with this view Mr. A. McConnell (another visiting medical officer) concurred. The guardians have appointed a sub-committee to consider Mr. Agnew's report and the public are awaiting their reply.

June 15th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Formation of a Joint between the Humerus and the Clavicle.

AT the meeting of the Academy of Sciences held on May 31st M. Ollier presented a report on the formation of articulations between bones which are in the normal condition independent of each other, the necessity for so doing having arisen from the natural articulations of such bones having been irretrievably destroyed. M. Ollier has succeeded in making joints possessing both strength and freedom of motion between bones which are not under ordinary conditions directly connected with one another. In thus re-uniting the bones it is possible to preserve not only the tissues which form the junction but also all that remains of the muscles which moved the original joint and, in fact, to form a new joint (*néarthrose*) surrounded by muscles sufficiently powerful for active exertion. M. Ollier reported the case of a man who was in his forty-eighth year in 1893 and who had received a gunshot wound in the shoulder in 1870. The wound healed after seven months but opened again in 1883. Successive resections were made for the purpose of checking the suppuration, the head of the humerus being removed in 1884, a portion of the scapula in 1885, and the remainder of this bone in 1890. The suppuration stopped, but the arm was powerless and tended to fall lower and lower from the clavicle, to which it was attached (and that only in front) by some muscular bundles which were not strong enough to raise it. In 1893 M. Ollier fixed the humerus to the clavicle and surrounded the approximated ends of the two bones with what remained of the scapular muscles, which eventually, the deltoid especially, acted powerfully on the new joint. After the operation the patient had no need of artificial supports and used his arm for every purpose required. For instance, he could put it on the top of his head, on his right shoulder, behind him on the back of his right thigh, and could also fold his arms—movements which were impossible for him before the operation.

Carpus Curvus.

At the meeting of the Academy of Medicine held on June 7th M. Pierre Delbet showed casts of a deformity of the wrist. The hand retained its normal shape, but was displaced as a whole, giving the appearance of a dislocation of the wrist forwards. On the posterior aspect of the wrist there was a remarkable prominence of the head of the ulna, which had evidently lost its normal attachment to the cuneiform bone. On the radial side the arrangement of parts was quite different, for instead of there being a projecting part there was an unbroken gradual slope from the forearm to the wrist. The thickness of the wrist was less on this side; the articular surface of the radius was not accessible as was that of the ulna, neither had it lost its connexions with the scaphoid and semi-lunar bones, but it was curved forwards. M. Delbet thought that the curving of the radius was the first stage in the train of symptoms and that this bone drew the carpus after it, giving rise to the dislocation of the cuneiform bone from the ulna. Straightening of the radius by osteotomy immediately reduced the dislocation of the ulna. As the lesion is in its way identical with genu valgum M. Delbet proposes to call it carpus curvus. When the deformity is very marked the indication is to perform osteotomy, as was done in the case just described; the deformity and the functional disability which accompanies it are thereby completely removed.

Superficial Area of the Human Body.

At the meeting of the Society of Biology held on June 4th MM. Bergonié and Sigalas stated that they had made measurements for the purpose of ascertaining the area of the surface of the human body. They first estimated the differences of area which might exist between a given plane surface and the same surface after it has been forced to assume an irregular form. Starting from this experiment they covered one half of a body with strips of sticking-plaister cut to a known size. The result for the surface of the body was 16206 square decimetres (17·4 sq. ft.). The figures obtained by M. Bouchard are about one-tenth higher than this.

Agglutination of Löffler's Bacilli.

At the same meeting of the Society of Biology M. Nicolas gave a demonstration showing that agglutination is produced when serum from a horse immunised against diphtheria is added to bouillon cultures of Löffler's bacillus. This reaction, however, is not constant but varies according to the bacilli employed, the serum being the same. It occurs in about half the cases. There is probably some biological condition which will account for the differences which have been observed in the production of the phenomena.

The Responsibility of Medical Experts.

Public attention is once more directed to the case of Dr. Méloche whom the *tribunal civil* of St. Nazaire last year ordered to pay 1000 francs (£40) damages to a woman accused of abortion. Dr. Méloche, who was the expert entrusted with the duty of examining the accused, believed that in all probability abortion had recently occurred. The woman's refusal to answer certain questions and her contradictory statements induced him to make a guarded diagnosis and three days afterwards she was delivered of a five months' fœtus; she had been arrested after his report was presented, but was immediately released, and believing that his mistake carried with it responsibility for her arrest she brought an action for damages against him. The court in giving judgment against Dr. Méloche blamed him for not having made a chemical examination of the blood, entering thereby into scientific questions its imperfect knowledge of which led to absurd expressions of opinion. This judgment was reversed by the Appeal Court on several grounds. Firstly, because the medical man in question had acted with all necessary prudence and had only given an opinion that there was a great probability of abortion having occurred. Secondly, this judgment, by affirming the responsibility of medical experts, would render their action impossible for the future. The medical expert is fallible. When he is consulted by a magistrate it is his duty to give a candid opinion and it is for the magistrate to obtain further information by reference to another expert if the report of the first one leaves him in uncertainty. An expert who, like Dr. Méloche, describes an offence as being highly probable could not be responsible for the conclusions which the magistrate, irresponsible himself, draws from the medical man's undecided opinion. Under these circumstances the case came before the Appeal Court of Rennes on May 26th and judgment was delivered on June 3rd reversing the judgment of the *tribunal civil* and declaring that Dr. Méloche had acted prudently in not giving a positive opinion in a difficult case and in not committing himself to more than the probability of the condition referred to. Furthermore, it could not be said that the opinion given by Dr. Méloche was the immediate cause of the arrest. This belongs to the province of the magistrate and consequently the medical expert cannot be held responsible for it.

June 14th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Imported Plague at Moses's Wells.

THE ill-fated steamer *Mehallah* is still in quarantine and likely to remain so for some time to come. It is still unknown how she contracted plague and her crew continue to asseverate that no one of them had any communication whatever with Jeddah or even Ras el Aswed, while the only remaining port, Suakin, is still declared to be quite free of plague. After the original case of the stoker of this vessel, who had undoubted plague, suspicion fell upon one of the seamen with enlarged glands, but his case was soon certified as not being plague. Now, the Egyptian doctor of this same steamer, who originally failed to diagnose the stoker's case, has not only contracted plague but has actually died from it. These are the first known instances of plague on

Egyptian territory since 1844—more than half a century ago. The earliest symptoms of the medical officer did not appear until 18 days after the stoker was removed from the ship and 11 days after the case of the suspected individual. This therefore looks as if the doctor had caught the disease from something on board the vessel itself, in spite of its having been disinfected and attempts being made to kill all the rats on board. How does one disinfect the bilge water and all the interior economy of a large steamer? Where do steamer rats live and how does one get at them to kill them? These questions are just now of the highest importance and it must not be forgotten that in many of the most recent epidemics plague has appeared among the rats of a community about the same time as it has attacked the earliest human beings. The details of the doctor's case are as follow. It is quite certain that he was well on May 21st and had no enlarged gland when he was medically inspected on that day. The patient stated that he felt perfectly well until noon on May 22nd, when he began to feel very ill and sent for Dr. Mazaraki, one of the quarantine officials, who found a temperature of 104·9° F., a pulse of 150, and a swollen and painful left femoral gland of about the size of a pea. The patient stated that the swelling of the gland was the result of an injury to his knee, but no trace of this injury could be discovered. He was at once taken ashore and isolated in hospital. Later in the day his temperature rose to 105·1° and he had some rigors, while the following day he became delirious and prostrate with stinking breath. On the 24th the urine became albuminous for the first time, the spleen was enlarged, he had many rigors, and the original gland increased in size and in tenderness. In spite of devoted treatment on the part of Dr. Hodgson, Dr. Lochelongue, and Dr. Mazaraki the unfortunate man died on the early morning of the 27th, less than five days after the onset of the symptoms. His end may have been hastened by the presence of lupus and another constitutional disease. It is fortunate that both the cases so far have been of the bubonic type and not septicæmic or pneumonic, which are obviously more infectious varieties. The Egyptian pilgrims are now undergoing twelve days' quarantine at Tor, which will be succeeded by five days' extra inspection at Ras Mallap, before they are allowed to set foot in Egypt. For the first time a thorough inspection of the women pilgrims is to be made and Miss Cutler, an English midwife and nurse, has been specially sent to Tor to superintend the native women searchers.

Fevers in Egyptian Prisons.

At the spring of the year typhus and relapsing fevers always make their appearance in any crowded and very insanitary community, and as most of the Egyptian prisons, owing to poverty and carelessness of the Government, contain all the predisposing factors for promoting such diseases, they have for some years attained an unfortunate notoriety, even in Egypt. During the late spring months the following prisons have suffered from relapsing fever, in some cases complicated with typhus fever also: Tourah, Hod el Marsoud, and Zaptieh, all three being in Cairo; Ghizeh, Alexandria, Damanhour, Tantah, Beniscouef, Zagazig, Kap el Zayet and Tel el Baroud. The only casualty among the medical officers is the much-regretted death of Dr. S. G. Kartulis from typhus fever at Alexandria, on April 27th. The published statistics for the month of March alone give 415 cases of these fevers in prisons with as many as 30 deaths. The number of deaths would probably have been greater had not Dr. Wilson temporarily placed himself at the service of the prisons department. He instituted satisfactory rules as regards hygiene, baths, food, and work which no doubt put an end to the various epidemics early in May. As a consequence of these outbreaks all over the country Coles Pasha has obtained leave to strengthen his administration by the new appointment of Dr. Parker, lately of the Eastern Fever Hospital, Homerton, London, as chief medical officer. The various natives now serving under him are quite ignorant of sanitation and preventive medicine, having been mostly educated in the prehistoric days, but none of them are too old to learn new ways. £13,000 were granted last year for building new prisons and £20,000 are to be spent this year, and every effort is being made to lessen the number of unnecessary prisoners. The prison department was one of the earliest of English reforms here in 1883, but it has of late years been pushed aside by more pressing claims.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Infectious Disease in Victoria.

TYPHOID fever still continues very prevalent in Victoria. At the meeting of the Board of Health held on April 20th the number of cases reported for the preceding fortnight was stated to be 475, with 40 deaths. Diphtheria is also prevalent, 62 cases with 8 deaths having been reported for the same period. Measles is epidemic and the schools are more than half emptied in consequence. The Government have at last granted a site for an infectious diseases hospital for the metropolis. At a meeting of the committee of the projected hospital held on April 19th a letter was read from the Chief Secretary stating that the Government would allow the hospital to be erected on a block 15 acres in extent in the ground reserved for the Yarra Bend Lunatic Asylum, provided that small-pox patients would not be admitted and that arrangements would be made for the adequate drainage of the block. The Government has also promised to give £2500 towards the erection of the buildings. It is to be hoped no delay will now take place, as the need of such an institution becomes daily more manifest, and also for proper ambulance arrangements. Quite recently public indignation was roused by a case in which a child dying from diphtheria could not obtain admission at a children's hospital. The father tried the Melbourne Hospital, but it was full. Next day he went to the hospital and was told that he could bring the child in. Then no ambulance could be obtained and the father carried the patient in his arms to the hospital, where the child soon afterwards died. At present the Health Act throws the responsibility of providing ambulances for infectious cases on the local authorities. These, however, with a very few exceptions, do not provide them owing to the expense and it is suggested that an ambulance should be kept at the hospital and maintained conjointly by the municipalities.

Health of Melbourne.

Dr. Jamieson, officer of health for the city of Melbourne, has just presented his report for the year 1897. The general mortality of the city was 13·6 per 1000, and the infant mortality was 119 per 1000 births. The mortality from typhoid fever was 2·85 per 10,000. Dr. Jamieson states that:

> The chief cause of infant mortality here, as in most parts of the world, is the prevalence of diarrhœal diseases, and that varies very markedly with the season of the year. This is very clearly shown by the fact that in all Melbourne the deaths of infants under one year numbered no fewer than 316 in December, as compared with 57 in October. The high summer temperature acts chiefly in causing easy deterioration of milk, which forms the staple food of infants artificially reared. Attention to the milk-supply is manifestly of the greatest importance in this connexion, and there has been distinct improvement in that respect of late years. The chief causes of death, other than the epidemics, which really occasion a small percentage of the total mortality, were: Tuberculosis, with 151 deaths; diarrhœal diseases, 110; pulmonary diseases (other than consumption), 95; diseases of the heart and great vessels, 86; nervous diseases, 84; renal system diseases, 75; and cancer, 32. The deaths from tuberculosis in all its forms were the same in number as last year, and with further close supervision of the meat- and milk-supply and other general sanitary improvements we may hope soon to see a steady diminution in the fatality. Though the typhoid mortality was at a comparatively low level all over Melbourne in 1897, it is unsatisfactory to find that it remains considerably higher than in the cities and towns of Great Britain. I doubt if there is any reasonable explanation to be found except in the fact that Melbourne over almost the whole of its area has still nothing better than surface drainage, and a pan system of nightsoil disposal.

A White Leper in Melbourne.

The Health Act in Victoria is very stringent in its provisions against leprosy. About six weeks ago a Russian Jew came to Melbourne from Western Australia to seek medical advice. Mr. Noyes discovered that he was suffering from leprosy. When the case was reported to the Board of Health the man was informed that he could not remain in Victoria except in isolation at the leper station. He was, however, permitted to leave the colony. He has been seven years in Australia, but is believed to have contracted the disease twenty years ago. At present there is only one leper in Victoria. He is an European and is segregated.

A New Medical Society.

The medical practitioners of Bendigo, Victoria, have established a local medical society as a branch of the Medical Society of Victoria. Mr. O. Penfold has been elected President and has delivered an opening address in which he expressed gratification at the formation of the society and

enlarged on the benefits to be gained from its existence. He also expressed the hope that the Bendigo Hospital would soon be recognised for clinical teaching by the university and that a children's hospital would be established in Bendigo.

Melbourne Hospital for Sick Children.

On April 20th was laid the foundation stone of the new buildings for the Children's Hospital, Melbourne. The ceremony was performed by three little children in the presence of the acting governor. Plans have been prepared for a completely new hospital at a cost of £60,000, but for the present the committee intend to expend only £16,000 upon a new out-patients' department, comprising a waiting hall and eight surgeons' rooms and examinations rooms, a kitchen block, steam laundry and disinfection plant, and a mortuary. Since the foundation of the institution in 1870 it has accommodated 14,007 in-patients and 559,267 out-patients have attended. In one week there have been as many as 1544 attendances of out-patients.

Sydney Hospital for Sick Children.

On April 18th the annual meeting of the Sydney Hospital for Sick Children was held, Lady Hampden presiding. The annual report stated that 516 in-patients had been treated during the year and 2860 out-patients. The medical report said that as much good work had been done as could be expected in the present buildings. The out-patient attendance had considerably increased, and there was little doubt but that this department was abused. The uniformity in the reduced death-rate from diphtheria since the introduction of the antitoxin treatment was very gratifying. The vacancies on the honorary staff were filled by the election of Dr. E. J. Jenkins and Dr. Chisholm, and to the two new positions on the out-patient staff Dr. E. H. Binney and Dr. G. H. Abbott were elected.

Allegations Against the Surgical Staff of Melbourne Hospital.

At the meeting of the committee of the Melbourne Hospital held on April 12th, the house committee brought up a report on the subject of admissions to the surgical wards, stating that the rules as to admissions had not been observed and recommending that in future a register be kept of surgical patients waiting for admission and they be admitted in the order in which they appear on the register. The report was adopted.

Deaths under Chloroform.

An elderly woman died recently at the Melbourne Hospital whilst chloroform was being administered. At the inquest the pathologist to the hospital stated that in his opinion the system of giving anæsthetics at the hospital was wrong and that the students were not properly taught. The cause of death was partly asphyxia and partly disease of the heart. Some apparently conflicting opinions were given by the surgeon who was about to operate and the anæsthetist to the hospital as to whether an anæsthetic should have been administered supposing the condition of the heart could have been ascertained during life. The anæsthetist said that the students did not avail themselves of his instruction because it was not compulsory.—An inquest was held at Sydney on April 18th concerning the death of a woman, aged thirty-eight years, who died while under the influence of chloroform administered for a dental operation. She had appeared to be perfectly healthy. Only a small amount of chloroform had been administered when a sudden spasm occurred and the pulse stopped.

Action against a Druggist.

At the Melbourne county-court on April 25th an action was brought against a druggist for £175 damages for negligence in dispensing a medicine from a written prescription. The prescription, it was alleged, was for a teaspoonful of cascara, and the druggist in writing out the label wrongly put one tablespoonful. The overdose it was alleged produced severe results, demanding surgical interference. The defence denied the mistake, but stated that if a mistake had been made the sufferings arose from the disease for which the prescription was ordered and were not produced by the prescription. Medical evidence was called for both sides and the jury found for the defendant.

Women as Resident and Honorary Medical Officers.

At the annual election of resident medical officers to the Melbourne Hospital Miss Violet May Plummer, M.B., was among those appointed. At the Sydney Hospital for Sick Children the board has passed a resolution that women were eligible for the position of honorary medical officers. This is the first hospital in the colonies which has made women eligible for honorary positions on the staff, although no one has yet been appointed.

May 4th.

Obituary.

HENRY LEE, F.R.C.S. ENG.,

CONSULTING SURGEON TO ST. GEORGE'S HOSPITAL.

MR. HENRY LEE, F.R.C.S. Eng., senior consulting surgeon to St. George's Hospital and Honorary Fellow of King's College, London, died at his residence, 61, Queensborough-terrace, Hyde-park, on Saturday, June 11th, at the age of eighty-one years. Mr. Lee was the youngest son of Captain Pincke Lee of Woolley Firs, Maidenhead Thicket, and was born in 1817. In 1833 he commenced his professional studies at King's College and in 1834 entered as a pupil at St. George's Hospital. He became a Member of the Royal College of Surgeons of England in 1839 and a Fellow in 1844. In 1861 he was elected assistant surgeon to St. George's Hospital, prior to which he had filled the office of surgeon to out-patients at the King's College Hospital. He became full surgeon to St. George's Hospital in 1863 and retired with the rank of consulting surgeon in 1878. For a period he also filled the office of Lecturer in Pathology and Surgery to the Royal College of Surgeons of England, and was elected a member of the Council in 1870. He was also consulting surgeon to Queen Charlotte's Lying-in Hospital and to the Lock Hospital.

Mr. Lee was a sound, able, and original surgeon, his methods being always marked by great independence of thought and judgment and by singular fertility of resource. Though never a rapid or brilliant operator he was both a bold and a successful one, his success being largely due to a scrupulous attention to the details of after treatment—a thing which was far rarer in his day than at present. As a teacher Mr. Lee was painstaking, solid, and thorough. His was not the eloquence which shone in the lecture theatre so much as the power of clear demonstration of minute facts which appealed more especially to the senior students and most of all to his house surgeons, whose office was a greatly coveted one while he was on the staff of St. George's Hospital.

The following estimate of Mr. Henry Lee's surgical work is from the pen of his colleague, Mr. Holmes:—

"I have been favoured by the editors of THE LANCET with a request that I would give its readers an estimate of Mr. Lee's surgical work; and I look on it as a duty which I owe to the memory of an old and valued colleague and friend to try to do this, however imperfect my estimate may be. Henry Lee's surgical work must be looked at from three points of view—as a pathologist, a syphilographer, and a practical surgeon. I have put pathology first because it was the foundation of all which he accomplished in his after career. Nearly his first essay in pathology was an attempt to put the knowledge of the condition called phlebitis—then much misunderstood—on a sounder basis. Possibly he went too far in arguing that the obstructing material in the veins is not in any case secreted by their lining membrane, but at any rate his paper (in vol. xxxv. of the Transactions of the Royal Medical and Chirurgical Society) showed that sometimes it is not: and the paper had the great merit of calling attention to the large part which coagulation of the blood plays in many cases of so-called 'phlebitis' and it no doubt assisted in the production of a more correct understanding of the many conditions which were comprised under that name. His life-long researches on syphilis had also their foundation in sound pathological inquiry, meaning by pathology not morbid anatomy only (as the word is too often misused to mean), but the science of disease, founded on the histories of cases, on the symptoms of disease in the living and on its products in the dead body; and, I may add (especially in connexion with syphilis), on experiment, for some of the most valuable parts of Mr. Lee's writings on syphilis concern the results of inoculation. In dealing with syphilis Mr. Lee seems to me to be equally meritorious as

a pathologist and as a practical surgeon. In the former capacity he shows more clearly than any other writer whom I have consulted the great and essential difference between the local and constitutional forms of syphilis; and as a practical surgeon he gives, I think, the clearest and the wisest directions when and how to use mercury, which, when all is said and done, is the only known treatment in the constitutional form of the disease; and he, more clearly than any, or at any rate most, authors, traces the natural history of the disease when left to run its course uncontrolled, avoiding the erroneous and exaggerated estimate of the destructive power of syphilis into which John Hunter was betrayed. I do not say that Mr. Lee was entirely free from the besetting sin of specialists of seeing their speciality in every dubious case that falls in their way, but I do say that he was more free from it than almost any specialist that I have met with and that his writings on what he had made, or what had become, his speciality are a model of wide information, correct reasoning, and sound practical wisdom. But Mr. Lee was too great a man to remain merely a pathologist and a specialist in venereal diseases. His bent was towards practical surgery and he had a genuine pleasure in its operative branch. These tastes had little room for exercise at King's College Hospital, where Mr. Lee's subordinate position and Sir W. Fergusson's brilliant talents as an operator kept him in the background: and it was therefore with equal satisfaction on both sides that Mr. Lee and his old teachers and fellow students found themselves colleagues on the surgical staff of St. George's Hospital, where though he was only an assistant he was allowed by the kindness of his seniors to do practically what he pleased in selecting cases to be under his own care and to perform any operations which might be sanctioned by a consultation. And he used this liberty freely during the two years he remained assistant surgeon. Mr. H. C. Johnson's death in 1863 brought him on to the full staff and he could then not only carry out his own views still more freely but also expound them to the students in the wards and in the clinical theatre, and in this clinical teaching he excelled. It would be the exaggeration of a friend writing directly after his subject's decease to say that he was a great surgeon, but he was an admirable officer in a hospital school, keenly interested in his duties and unwearied in their discharge, ingenious and resourceful in the many exigencies of surgery, zealous in the instruction of the students, cordial in his intercourse with his colleagues, and, above all, solicitous for the welfare of his patients. His published works have stood the test of time and criticism. The chief are his treatise on Practical Pathology, his Lectures on Syphilis at the Royal College of Surgeons of England, and his treatise on Venereal Diseases in the "System of Surgery," which I edited. None of these books either are obsolete or are likely to become so, and I believe that I am giving utterance to the common opinion of surgeons in saying that in his own province he was unrivalled. This is high praise indeed for a man whose labours extend through half a century of constant change and progress, but I believe it is thoroughly well deserved. He was the last of the St. George's surgeons of the direct school of Brodie and far from the least distinguished of them. His colleagues and pupils there will long keep his name in honour."

Mr. Lee retained his vigour, both of body and mind, to an unusually late period, and it was only a few years ago that he retired at length from active practice and gave up his house in Savile-row. He was a man of strong character, of courage, and determination, but of a most kindly heart and genial disposition and was always regarded with great affection by his old pupils at St. George's Hospital. During his long professional career it may be said that he made many attached friends and no enemies. He was twice married and his second wife survives him as do daughters by both marriages.

THE LATIN-AMERICAN SCIENTIFIC CONGRESS.

(FROM A CORRESPONDENT.)

THE first Scientific Congress which has ever been held in South America, organised by the *Sociedad Científica* of Buenos Ayres, was opened in that city on April 11th, 1898. The members numbered about 600 and included delegates and visitors from every republic in South America and also several delegates from Mexico, so that the organisers have every reason to be proud of the success which has attended this the first effort to collect together men of science and learning from the continent of South America. In point of numbers the Argentine Republic heads the list with over 300 members, then follow Chili, Uruguay, Brazil, Paraguay, Peru, Ecuador, Mexico, &c.

The Congress was divided into seven sections, as follows: (1) Exact Sciences—(*a*) Pure and Applied Mathematics and (*b*) Astronomy, Topography, and Land Surveying; (2) Engineering Sciences, Civil and Military, including Architecture; (3) Physical and Chemical Sciences; (4) Natural Sciences, including Biology, Geology, and Palæontology; (5) Medical Sciences; (6) Anthropology; and (7) Sociology. But the first and second sections, the third and fourth sections, and the sixth and seventh sections were taken together, so that the Congress actually met in four sections.

The Medical Sciences section being that which will more particularly interest your readers I append a *résumé* of the several meetings, with a list of the principal papers read. It will be seen that many of the subjects discussed were of local interest chiefly, but some are of universal interest, such as Leprosy, Tuberculosis, Vaccination and Small-pox, Infectious and Contagious Diseases in Relation to Sanitary Works, Subsoil Drainage and Changes in Atmospheric Pressure, Inoculation in Carbuncle and the Preparation of Anti-carbuncular Serum, the Microbiology and Therapeutics of Whooping-cough, the X Rays in Surgery, Suicide and Mental Diseases, and Gonococcus—its Toxin and Serum, &c.

The President of the Medical Sciences Section was Dr. R. Wernicke, the secretary was Dr. Aracz Alfaro, and the meetings took place every afternoon from 2 to 7 P.M. The attendance was good and the members were fairly representative, the discussion being carried on chiefly by the younger professors and teachers in the medical faculty and schools.

Vaccination and Small-pox.

Papers were read by Dr. DIAZ (Buenos Ayres) and Dr. MURILLO (Chili). Historical evidence showed that small-pox has always been a terribly destructive scourge in these countries, whole tribes of aborigines being destroyed in the last and preceding centuries. Chili has now the most complete and effective system of vaccination on this continent, with a central board in Santiago and branch offices and vaccinators and inspectors all over the country. Glycerine extract of animal vaccine (calf) is almost universally used and in the Argentine Republic calf vaccine has been for some years exclusively used. But the organisation of the Vaccination Department is not nearly so complete in the Argentine as in Chili, there being at present no special and independent board. In Chili last year £10,000 were spent on the vaccination service, and 38,000 slides of vaccine were distributed; in the Argentine Republic over 1,200,000 slides were distributed free of cost. The mortality has notably decreased in Chili and the River Plate and is now insignificant, in fact almost *nil*, in Montevideo. It may be noted here that compulsory notification is applied in the Argentine Republic to small-pox, measles, scarlet fever, diphtheria, typhoid and typhus fevers, cholera, yellow fever, puerperal fever, and tuberculosis, and that a staff of official disinfectors is at the disposal of the public day and night.

Leprosy.

Dr. SOMMER (Buenos Ayres) and Dr. CANABAL (Montevideo) pointed out the relation of leprosy to the low-lying and swampy districts on the borders of our great rivers, where also the mean temperature is highest, notably Corrientes, where there are probably now over 200 lepers. The disease has been slowly but surely making headway in the Argentine. The tuberculous form is most prevalent, although the analgesic has been observed. The spread of the disease was said to be undoubtedly due to contagion. As regards etiology, Dr. Sommer suggested that mosquitoes and other insects might possibly convey the poison, but he was not prepared with experiments to prove it. This idea was combated by several speakers. The meeting resolved that the resolutions of the Berlin Conference (October, 1897) should be adopted for this country.

Tuberculosis in the Argentine.

Dr. GACHE showed that the death-rate from this disease was now from 7 to 8 per cent. of all deaths in Buenos Ayres and from 3 to 5 per cent. in the northern provinces, such as Mendoza, Catamarca, and Salta. The rate had notably decreased of late years. The inoculation with tuberculin was now compulsory with regard to all the cows of all the

dairies of the city and in 1897 over 1700 cows were inoculated, of which some 22 per cent. gave the reaction.

Dr. J. T. R. DAVISON, in an interesting paper on the Effect of Earth Removal and Atmospheric Pressure on Various Diseases pointed out that since 1889, when the surface drainage of the city of Buenos Ayres was finally completed, the prevalence of tuberculosis had decreased considerably, and he showed charts which proved that previously to 1874, when the sanitary works were first commenced, tuberculosis, typhoid fever, cholera, and diphtheria were far more prevalent and more fatal than they are now. He was also of opinion that when subsoil drainage was carried out, as he hoped it would soon be, there would be a still greater reduction in the prevalence of these diseases.

Microbiology and Therapeutics of Whooping-cough.

Dr. MONCORVO, jun., of Rio Janeiro, said that the micrococcus of whooping-cough is found alone or in chains; it grows best in peptonised agar-agar, giving a result in from twenty-two to twenty-eight hours of innumerable small, bright spots; in four days the evolution is completed. Inoculations in 50 animals of different species gave characteristic attacks of whooping-cough in 48. The toxin has no effect on the red corpuscles of the blood; hence its action is on the mucous membrane of the larynx. Dr. Moncorvo found that a 10 or 15 per cent. solution of citric acid applied locally to the larynx was the best remedy and he employed lemonade as a prophylactic. In these countries lemon juice is a favourite and old-established remedy in throat diseases, being especially useful in follicular tonsillitis.

Infantile Gastro-enteritis in Buenos Ayres.

Dr. A. ALFARO gave an interesting summary of the causes and death-rate of infantile diarrhœa, which showed that during the last ten years the certified death-rate from gastro-enteritis up to two years of age amounted to 32 per cent. of the general death-rate. In his own clinique at the San Roque Hospital of 1103 children applying for treatment 382 suffered from gastro-enteritis. The death-rate is lowest during the winter months, June, July, and August, but begins to rise in November, attaining its maximum—50 per cent.—usually in March, the fag end of the summer. Dr. Alfari's statistics showed in a marked manner the influence of the infants' diet, for of his 382 cases only 7 were at the breast and carefully nursed; 71 were also at the breast but badly nursed and under unfavourable hygienic surroundings; 129 were on artificial (cows', asses', goats') milk diet; and 175 were on mixed diet, such as milk, farinaceous materials, &c. Milk may be perfectly sterilised, but septic organisms get in through the rubber teats, and by the mother's and nurse's hands, &c. The prophylactic measures adopted included: (1) special regulations for the wet nurse; (2) properly organised "crèches" where infants can be accommodated and fed; (3) the establishment of special farms under municipal control; and (4) an arrangement that the ordinary dairies should supply a "special" milk for children, as in Denmark, Germany, &c.

The Gonococcus: its Toxin and Serum.

Dr. JULIO MENDEZ gave the following conclusions as the result of his investigations. 1. In 64 cases of blenorrhagia he found the gonococcus in 27. 2. The gonococcus is easily cultivated in the ordinary media. 3. The toxin put in contact with the healthy human urethra for from five to fifteen minutes produced in an hour irritation and heat about the neck of the bladder and in from 24 to 36 hours characteristic blenorrhœa. 4. Serum prepared from immunised dogs has strong antitoxin properties and retards the death of control animals. 5. The gonococcus is never found in blenorrhœa or blenorrhagic arthritis of more than 4 or 5 days' standing.

The Use of Expressed Juice of Maize.

Dr. LLOBET drew attention to the great alimentary value of the expressed juice or extract of young and tender maize. It has the advantage over wheat in that it contains a much larger proportion of fats; proteids and salts (which give it decided diuretic properties) are also in good proportion. He proposed to call this preparation "vegetable milk."

The Study of the Specialities.

The following motion (literally translated) was passed unanimously at one of the meetings of the Medical Sciences section: "It is strongly recommended to medical students not to commence the study of specialities until their general medical curriculum is completed, as such studies are likely to be very prejudicial to the obtaining of complete clinical knowledge in general medicine."

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen having previously passed the necessary examinations, and having conformed to the by-laws and regulations, have been admitted Fellows of the College in order of seniority as Member, in accordance with the provisions of the by-laws, viz.:—

Roll, Grahame Winfield, B.A., M.B. and B.C. Camb., L.R.C.P. Lond., Cambridge University, St. Thomas's and St. Bartholomew's Hospital, Jan. 29th, 1886.
Wright, Dudley D'Auvergne, L.R.C.P. Lond., University College Hospital and Vienna University, Aug. 2nd, 1888.
Tilley, Herbert, M.D., B.S. Lond., L.R.C.P. Lond., University College Hospital, July 28th, 1890.
Frazer, John Ernest Sullivan, L.R.C.P. Lond., St. Bartholomew's Hospital, July 30th, 1891.
Clarkson, George Aylwin, L.R.C.P. Lond., St. George's Hospital, Feb. 8th, 1894.
Cochrane, Archer William Ross, M.B. Lond., L.R.C.P. Lond. (Surgeon-Lieutenant I.M.S. Bengal), St. Bartholomew's Hospital, Nov. 8th, 1894.
Collard, Frederick Stuartson, L.R.C.P. Lond., St. George's Hospital, Nov 8th, 1894.
Prain, John Leay, L.R.C.P. Lond., St. Thomas's Hospital, Nov. 8th, 1894.
Toye, Edwin Josiah, M.B., B.S. Lond., L.R.C.P. Lond., St. Bartholomew's Hospital, May 9th, 1895.
Cocke, Arthur, M.A., M.B., B.Ch. Oxon., L.R.C.P. Lond., Oxford University and London Hospital, Nov. 14th, 1895.
Tod, Hunter Finlay, M.A., M.B., B.C. Camb., L.R.C.P. Lond., Cambridge University and London Hospital, Feb. 13th, 1896.
Benson, John Robinson, L.R.C.P. Lond., King's College Hospital, May 14th, 1896.
Briggs, John Arthur Oswald, M.B. Lond., L.R.C.P. Lond., St. Bartholomew's Hospital, May 14th, 1896.
Leicester, John Cyril Holdich, B.Sc., M.D. Lond., L.R.C.P. Lond., University College Hospital, May 14th, 1896.
Price, Henry James, L.R.C.P. Lond., University College Hospital and St. Bartholomew's Hospital, May 14th, 1896.
Godson, Alfred Henry, L.R.C.P. Lond., B.A., M.B., B.C. Camb., Cambridge University and Guy's Hospital, May 4th, 1898.
Másiná, Hormasji Manekji, L.M. & S. Bombay, Grant Medical College, Bombay, and St. Bartholomew's Hospital (not a Member).

One other gentleman passed, but not having attained the legal age of twenty-five years will receive his diploma at a future meeting of the Council; and 20 were referred, 15 for six months and 5 for one year.

UNIVERSITY OF CAMBRIDGE.—On June 9th the following medical and surgical degrees were conferred:—

Doctor of Medicine.—John Nachbar, B.A., Clare; Edmund Towers Fison, M.A., Corpus; Arthur Martin Mitchell, M.A., Queen's; Herbert William James Marks (also B.C.), M.A., Jesus; and Lewis Gwillim Davies, B.A., unattached.

Bachelor of Medicine and Bachelor of Surgery.—Robert Hamilton Bell, B.A., and the Hon. George Hepburn-Scott, B.A., Trinity; Henry Lonsdale Gregory, B.A., St. John's; Thomas Henry Brown, B.A., Pembroke; Percy Levick, B.A., Jesus; Barnard Roworth Turner, B.A., Emmanuel; and Alan Baldrey Green, M.A., Downing.

The Vice-Chancellor announces benefactions to the amount of over £6000, the greater number for the new medical and law schools.

THE VICTORIA UNIVERSITY.—At a meeting of the University Council held at Manchester on June 9th the following candidates were declared deserving of the degree of M.D.:—

W. C. Brown, Owens College; *F. J. H. Coutts, Owens College; J. S. Dockray, Owens College; and *F. C. Moore, Owens College.

* Awarded gold medal.

THE BRITISH ORTHOPÆDIC SOCIETY.—A meeting of this society was held in the board room of the Royal Mineral Water Hospital, Bath, on May 14th, Mr. Keetley being in the chair.—Mr. William Thomas showed a Shoe for the Treatment of Talipes and Mr. Pagan Lowe showed a Boot for Flat-feet which he had found useful in rheumatic and traumatic cases.—Mr. C. T. Griffiths opened a discussion on Rheumatoid Arthritis from a Surgical Standpoint and came to the conclusion that operative interference should be more often resorted to when osteophytes were present and the mushroom-shaped ends of the bones had become obtrusively evident.—The Chairman related various cases in which he had with advantage removed bony and cartilaginous prominences from the articular surfaces of chronic rheumatoid joints, substituting depressions. Ankylosis, he stated, had not followed.—Dr. Wohlmann produced a Cast showing Typical Rheumatoid Arthritis, which disease was, he said, quite distinct from rheumatism, gout, and osteo-arthritis. He deprecated early surgical interference other than aspiration.—Mr. Tubby thought that the disease was due to lesion of the central nervous system and held that surgical interference was only justifiable in the final stage.—

Mr. W. Thomas, Mr. Pagan Lowe, Mr. Jackson Clarke, Mr. Noble Smith, and Dr. Melsome also spoke.—A vote of thanks to the Governors of the hospital for allowing the use of the room closed the proceedings.

THE REGISTRATION OF MIDWIVES.—The annual general meeting of the Association for Promoting the Compulsory Registration of Midwives was held on June 9th at 3 Grosvenor-place. Lady Balfour of Burleigh, President of the association, took the chair and speeches were made by Mr. Heywood Johnstone, M.P., Dr. Annie McCall, Dr. Cullingworth, and others. Mr. Heywood Johnstone, in moving the adoption of the report said he feared there was no prospect of the Compulsory Registration Bill being read a second time during the present session. Interest in the subject had, however, increased very much during the past twelve months and that interest was rapidly growing. The report was adopted.

FREEMASONRY.—*The Rahere Lodge, No. 2546:* The installation meeting of this lodge was held in the great hall of St. Bartholomew's Hospital on Tuesday, June 14th, at 5 P.M., Bro. W. J. Walsham, W.M., being in the chair. Bros. Cecil Christopherson, P. V. Dodd, and H. Hind were elected joining members, and Messrs. W. J. C. Keats, E. W. Brewerton, and Harold Burrows were initiated into Freemasonry. Bro. Walsham then installed Bro. T. G. A. Burns as Worshipful Master for the ensuing year. The report of the Audit Committee was received and adopted. A vote of 12 guineas was confirmed to constitute the Lodge a permanent member of the correspondence circle of the Quatuor Coronati Lodge No. 2076. Bros. West, Gilbertson, and Cross were appointed members of the Standing Committee. The brethren afterwards dined together at the Trocadero Restaurant.

UNFOUNDED CHARGE AGAINST A MEDICAL MAN.—At the meeting of the Helston (Cornwall) Board of Guardians held on June 11th Mr. W. Wearne, M.R.C.S. Eng., L.S.A., the medical officer of the First District of the Helston Union, appeared to answer a charge of neglecting a male pauper. It was alleged that although the man several times visited Mr. Wearne he was unable to see him except on one occasion, when Mr. Wearne told him he had to see an urgent case. Mr. Wearne stated that he did not know the man had visited him until he saw the complaints in the papers and added that the man had since told him that he was sorry for what had taken place before the guardians, that he was made to go there and did not know what he was wanted for, and that he had nothing in the world against the medical man. After discussion the guardians passed a resolution entirely exonerating the medical officer from any blame and regretting that a member of the board should have brought such a groundless charge.

DIPHTHERIA IN LONDON.—The amount of diphtheria recorded in London in the four weeks ended on May 21st showed a slight increase upon that chronicled in the like period ended on April 23rd and thus caused a break in the decline of the disease which set in during the four-weekly period ended on March 26th. In the four weeks to Feb. 26th there had been 939 notified cases, in the succeeding similar period 813 cases, and in the four weeks to April 23rd a still further fall to 729. The period ended on May 21st witnessed 763 notified attacks. In the April period all the sanitary areas of London had been invaded, two of them had each upwards of 50 cases, and the weekly average for the period was 182; while in the May period one district escaped invasion, other 3 had only 4 cases in all, and but one area had more than 50 attacks. Still the weekly average was 191. But if the May period thus exceeded April in the amount of diphtheria, such was by no means the case as regards mortality from the disease. The deaths in the April period had been week by week 45, 29, 34, and 31, a total of 139, and a weekly average of 35, while the case mortality had been 19·1 per cent. But in May the weekly numbers of deaths were 39, 27, 20, and 21, or 107 in all, yielding a weekly average of 27, and a case mortality of only 15·3 per cent. Even more striking was the fall in mortality in the Outer Ring; in April the weekly numbers totalled to 65, an average of 16; in May they were only 14, 13, 10, and 8 respectively, a weekly average of 11 and 45 in all. Thus the amount of diphtheria was more than maintained in London in the May period as compared with April, while both in the county and in the suburban areas the mortality showed sensible decrease. In the week ended May 28th the deaths from diphtheria in London fell from 31 to 27 and were as many as 9 below the corrected decennial average for the corresponding weeks of 1888–97. Battersea was credited with three of the deaths and all 27 were in young persons aged under twenty years, two only being of infants, and 15 of children under five years of age. In the Outer Ring the deaths from diphtheria rose to 14, of which 6 occurred in West Ham, 4 in Edmonton, and two in Kingston registration districts. In the next week, ended June 4th, the deaths registered in London rose to 30, but were still 5 below the corrected decennial rate. 5 occurred in Hackney, and 3 in Islington, in Bethnal Green, and in Camberwell sanitary areas. None of the deaths were of infants, but 22 were of children in the first quinquenniad of life, and only one occurred of a person aged over twenty years. In the Outer Ring the deaths were 10 in number, there being 3 in Edmonton, 2 in West Ham, and 2 in Croydon registration districts. Last week the registered deaths from the disease in London fell to 23, being 12 below the corrected decennial average. The deaths, though few, were scattered over a wide area and were all, save one, of young persons aged under twenty years, only 1 being of an infant and 12 in all of children under five years of age. In the Outer Ring there were registered 11 deaths from the disease, including 3 in Dartford and 3 in West Ham registration districts. Hence, in London at any rate, there is seemingly some factor at work which is sensibly diminishing the mortality from diphtheria.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

London University Commission Bill.

THIS measure having passed all its stages in the House of Lords is now in the House of Commons, where on Tuesday, June 14th, after a long and interesting debate, it was read a second time and referred to the Grand Committee on Law. Mr. George Harwood, seconded by Mr. Yoxall, moved the rejection of the Bill but did not press the motion to a division.

The Sick and Wounded in the Soudan.

General Russell has given notice that on an early date he proposes in reference to the recent operations in the Soudan to move "that in the opinion of this House it is the duty of Her Majesty's Government to take immediate steps to ensure that due provision is made for the care of the sick and wounded during the remainder of the campaign."

Poisons Bill.

In the House of Lords on Monday, June 13th, the Duke of Devonshire formally introduced "a Bill for regulating the sale of certain poisonous substances."

HOUSE OF COMMONS.

THURSDAY, JUNE 9TH.

Medical Arrangements in the Soudan.

General Russell asked the Under-Secretary of State for War whether the Medical Department attached to the British brigade at the battle of Atbara were insufficiently provided with chloroform or anæsthetics for the performance of operations on the battle-field, and if so what was the cause of such an omission; and whether a court of inquiry would be ordered to inquire into the circumstances.—Mr. Brodrick replied: The field medical equipment of each regimental unit, bearer company, and field hospital of the British brigade was fully equipped with chloroform and anæsthetics in accordance with the regulations, and there was an ample reserve at Wady Halfa. There is no reason to suppose there was any deficiency at the battle of Atbara.—General Russell asked whether there were no light ambulances attached to the cavalry in Egypt, and whether the only way of carrying the wounded after the cavalry reconnaissance before the battle of Atbara was by tying them on to gun limbers; and if so whether steps would be taken in future to have more attention paid to the medical arrangements.—Mr. Brodrick: No British cavalry were employed in the reconnaissance referred to. The medical arrangements for the cavalry who were present rested with the Sirdar.—General Russell asked whether the litters for the conveyance of wounded after the battle of Atbara were unprovided with sunshades such as were always attached to litters in hot climates, and, if so, if he would state the cause of this omission; and, whether any steps had been taken to ensure proper litters being provided for the wounded in future.—Mr. Brodrick: The stretchers hitherto provided for the British Army have not been fitted with covers. A supply of stretchers with folding hoods is, as I have already stated in the House, on its way to Egypt. The wounded at the battle of Atbara were carefully placed in the shade and only removed after dark.—General Russell asked whether no apparatus for the application of the Roentgen rays was carried with the field army during the recent operations in Egypt, whether there was every reason to believe that some lives of wounded officers and men might have been saved had these appliances been available, and whether in future the Government would take steps to prevent any question of economy in transport interfering with every precaution being taken to save valuable lives.—Mr. Brodrick: The Roentgen ray apparatus, which is a very recent invention, is very difficult to adapt for field service and was not carried with the field army in the recent operations. From the returns the medical authorities do not consider there was a single case in which

life could have been saved by the use of the apparatus. Two sets are now in Egypt and one more will be sent out shortly. Two have been adapted as far as possible for field service and one is for use in the base hospital.—Sir James Fergusson asked whether 400 men were not wounded by bullets, and whether the apparatus would not have been most useful in locating the bullets.—Mr. Brodrick: The senior medical officer has gone carefully into the cases and has been unable to trace any single case in which the apparatus would have been specially useful or in which an operation would have been carried out more successfully by the use of the rays.—General Russell asked the Under Secretary whether complaints had reached him that the medical arrangements for the reception of the wounded British officers at Cairo after the recent campaign were insufficient and unsatisfactory; that seven wounded officers were put into one small ward; and that the nursing staff was entirely inadequate; and whether the Government would order a searching inquiry to be made into this matter.—Mr. Brodrick: The ward in the Citadel Hospital, Cairo, in which the seven wounded officers were placed, is large and lofty and the cubic space and superficial area ample. The nursing staff consisted of five female nurses and over sixty men of the Medical Staff Corps, all of whom are trained as nurses. Every attention is being paid to the men wounded in the recent action.—General Russell: Is the right hon. gentleman aware that there was only one female nurse told off to attend to the officers?—Mr. Brodrick: I think my hon. and gallant friend is in error. What happened was that the superintendent nurse desired to wait on the wounded officers herself and for that reason the wounded officers got the idea that there was only one nurse able to attend upon them. No inquiry is needed. The staff of nurses is ample.

Petroleum Oil Accidents.

Mr. Ascroft asked the Home Secretary whether he was aware that since May 17th last there had been no less than three deaths in the metropolis and numerous fires caused by the use of dangerous low flash petroleum oil, and whether the Government intended to deal with the question and introduce a Bill at the earliest possible moment.—Sir M. White Ridley said in reply that no legislative proposals could be made until the report of the Select Committee on Petroleum had been received.

Rules for Dangerous Employments.

Mr. Tennant asked the Attorney-General whether it was in the power of the Secretary of State to make rules prohibiting the employment of any class of persons in a process certified by him to be dangerous or injurious to health, under Section 8 of the Factory and Workshop Act, 1891, as amended by Section 28 of the Act of 1895.—The Attorney-General said in reply: The Secretary of State has no power to make rules as suggested by the question. Rules can be proposed by the Secretary of State or the Chief Inspector, as the case may be, but they can only be established either by consent of the occupier of each factory or by arbitration.

Habitual Inebriates Bill.

After a short debate in which Sir M. White Ridley, Sir Walter Foster, Sir Charles Cameron, Dr. Farquharson and others took part, this bill was read a second time and referred to the Grand Committee on Law. The Home Secretary undertook to extend the operation of the bill to Ireland.

FRIDAY, JUNE 10TH.

Boots for the Soldiers in the Soudan.

Mr. Powell Williams, in reply to a question by Captain Bagot, said that boots made in strict accordance with the specifications sent home by the Sirdar will be issued to the British troops for the campaign in the Soudan.

The War Office and Artificial Limbs.

Sir Edward Hill asked the Under Secretary of State for War whether there was any ground for the allegation that soldiers who have had the misfortune to lose an arm or a leg in the service of the country were allowed to leave hospital without being furnished with an artificial limb; and, if so, whether he would take steps to cause the present regulations to be reconsidered.—Mr. Brodrick replied: Artificial limbs have hitherto been supplied to soldiers at the discretion of the Commissioners of Chelsea Hospital. Lord Lansdowne, however, considers that in every case where persons have lost a limb in the service of their country an artificial limb should be furnished at the public expense and a regulation will be issued on the subject.

MONDAY, JUNE 13TH.

Imported Milk.

Mr. Heywood Johnstone asked the Under Secretary of State for Foreign Affairs if any further report had been received from Mr. Gurney, Her Britannic Majesty's consul at Cherbourg, with regard to the import of fresh milk from that district by Messrs. Lepont and Son, and as to the nature of the antiseptic said to be employed by them to preserve the milk; and if any such information had been received when would it be published.—Mr. Curzon replied that a further report from Mr. Gurney had been received and had been communicated to the Board of Agriculture and the Local Government Board. The whole was not suitable for publication, but the more important parts would be published in the *Board of Trade Journal*.

Summer Clothing for the London Police.

Mr. Heywood Johnstone asked the Home Secretary whether summer clothing would be issued to the Metropolitan Police during the present month and if some lighter form of helmet or headgear could be issued to those on duty indoors.—Sir M. White Ridley replied that summer clothing had already been issued and taken into wear. New helmets, which were about 3 oz. lighter than the old pattern, and the lightest it was possible to get consistently with being serviceable, were issued last year.

TUESDAY, JUNE 14TH.

The Treatment of Sick Soldiers

Captain Norton asked the Under Secretary of State for War whether it had been brought to his notice that one of the causes of the large number of old soldiers now to be found in workhouse infirmaries was due to the fact that until quite recently convalescent soldiers discharged from military hospitals had either to reside with their relatives or to return to full duty, with the result that they were not infrequently speedily back in hospital again, and that soldiers dying from incurable diseases had perforce to leave the hospitals; and whether he would consider the advisability of establishing convalescent homes where soldiers might be sent from the military hospitals, seeing that in the long run considerable economy would be effected and the efficiency of the Army increased.—Mr. Brodrick: The Secretary of State is not prepared to admit the premisses in the hon. Member's question. In certain cases sick soldiers are granted sick furlough for the purpose of residing with their friends when it is thought that the change will do them good, but otherwise they remain in hospital till cured. Soldiers suffering from incurable disease are not discharged from hospital unless it be at their own request or at the desire of their friends. There are convalescent hospitals at several stations in India, also at Malta, Ceylon, Hong-Kong, and Cyprus, while at home there is one at Eastbourne to which patients whose convalescence is not fully established may be sent.

Yellow Phosphorus in the Match Trade.

Mr. Steadman asked the Home Secretary whether his attention had been called to the Statement by Mr. Talbot, medical officer of health for Bow—viz., that he had visited the works of Bryant and May and was of opinion that unless the use of yellow phosphorus was prohibited these cases would continually occur. Under these circumstances would he bring forward an amendment to the Factory Acts having for its object the prohibition of the use of yellow phosphorus in the manufacture of matches, and would he prosecute either Bryant and May or their medical officer in consequence of the death of one of their workmen, Cornelius Lean.—Sir M. White Ridley, in reply, said that he had been informed by the District Board of Works that the medical officer had made a report to this effect and he (the Home Secretary) had asked for a copy of the report; without seeing that he could not, of course, judge of the value of his opinion. The whole subject of the use of yellow phosphorus was being thoroughly considered and active inquiries were being carried out in all directions. As far as the case of Lean was concerned he was informed that there were no grounds for instituting a prosecution for manslaughter. Messrs. Bryant and May and their medical man failed to notify the case, but there was no ground for thinking that their failure to do so was the cause of Lean's death.

Lead Poisoning in the Potteries.

Mr. Tennant asked the Home Secretary whether he had received any reports of the recent deaths from lead poisoning from the certifying surgeon for the Potteries District, and, if so, whether he would lay them upon the table.—Sir M. White Ridley replied: The hon. Member no doubt knows that the certifying surgeon has to report upon all cases of lead poisoning reported to him and not only the cases in which death occurs. His reports go to the superintendent inspector—in this case at Birmingham. I have not yet received all the reports and therefore I cannot give an answer at the present time.

THE VACCINATION BILL.

PROCEEDINGS IN GRAND COMMITTEE.

The Grand Committee of the House of Commons on Law met on Tuesday, June 14th, with Sir Henry Campbell-Bannerman in the chair, and began the consideration of the Vaccination Bill promoted by the Government.

Mr. Chaplin, President of the Local Government Board, took charge of the Bill, having beside him Sir Hugh Owen, Permanent Secretary of the Board, and Sir Richard Thorne, Principal Medical Officer of the Board.

Mr. Channing opened the proceedings by moving to insert at the beginning of the first clause words limiting the operation of the Bill to three years. He did so, he said, because he considered the measure to be experimental in character. Among other things it upset one of the vital recommendations of the Royal Commission which devoted seven years to the study of vaccination and took an enormous amount of evidence. The Royal Commission recommended that compulsion 'should be substantially done away with, but this measure reinstated compulsion and did so upon a distinct plea—the plea being the discovery of a form of lymph free from the risks and dangers which the Royal Commissioners found themselves compelled to recognise as associated with the present system of vaccination. As to this calf lymph he did not think that it had been absolutely ascertained to be free from risk. On the contrary there was credible evidence to the effect that it produced serious disorders in children and even caused death, and he used this as an argument why this Bill should be regarded as an experiment and limited in its operation.

Mr. Chaplin submitted that the speech of the hon. Member was appropriate to the second reading but not to the committee stage of the Bill. As to the merits of calf lymph he would only say that his study of the question led him to a totally different conclusion from that of the hon. Member, while as to the proposal that the operation of the Bill should be limited to three years he could not for a moment think of accepting it.

Sir Charles Dalrymple, one of the members of the Vaccination Commission, said he was at a loss to understand what Mr. Channing meant in his references to the report of that body. It was true they had made a very long report and that this Bill was a very short one, but in the Bill there were two recommendations of the Royal Commission—the extension of the age and the domiciliary visits—to which he attached very great importance. This proposal he regarded as one of the first lines of attack upon the Bill and he hoped the committee would reject it.

Sir Charles Dilke said he was in favour of the Bill, but all the same he thought it an experiment and as such it should be limited in its operation in the way proposed.

Mr. Monk took the view that to limit the operation of the Bill would be fatal to its success and increase the excitement in the public mind over the vaccination question.

Mr. Thomas Bayley insisted that glycerinated calf lymph was an experiment and that it was only right that the subject of its use should be reconsidered at the end of three years.

Mr. Logan said he was opposed to the Bill altogether and therefore could not approve of its being in operation even for three years. The people he represented in this matter were people who had conscientious objections to vaccination.

Sir Walter Foster intimated that he was prepared to vote for limitation of the period of operation.

Mr. J. Brigg thought that limitation would be calculated to overcome the feeling of opposition to the Bill.

Mr. Pickersgill declared himself an out-and-out opponent of the Bill

and desirous to defeat it. He insisted that if the Bill were passed in its present form it would not be the end but the beginning of public controversy and excitement.

After some further debate the vote was taken, when Mr. Channing's proposal was defeated by 21 to 14 votes.

The committee then proceeded to the consideration of Clause 1 which in the Bill as introduced was in the following terms, viz.:—"The period within which the parent or other person having the custody of a child shall cause the child to be vaccinated shall be *twelve months* from the birth of the child instead of the period of three months mentioned in Section 16 of the Vaccination Act of 1867, and so much of that section as requires the child to be taken to a public vaccinator to be vaccinated shall be repealed. The public vaccinator of the district shall, if the parent or other person having the custody of a child so requires, visit the home of the child for the purpose of vaccinating the child. If a child is not vaccinated within *nine months* after its birth, the public vaccinator of the district shall visit the home of the child, and shall offer to vaccinate the child with glycerinated calf lymph."

Mr. Carlile moved to substitute six months for twelve as the period from birth within which the vaccination was to take place. If his amendment were adopted he said it would make the law in England uniform with that in Scotland, it would reduce the difficulty of tracing removals, and it would get the vaccination over before the child began to move about and ran the risk of having the wound scratched and irritated.

Sir Walter Foster said that the difficulty of tracing removals was a serious business and made him prefer six months to twelve.

Sir William Priestley supported the amendment. He felt certain, he said, that between six months and twelve a great many of the children would be lost sight of. He further saw no reason why there should not be uniformity between Scotland and England in this matter. A great many people had residences in both countries, and it seemed an anomaly that in the one country there should be vaccination under six months, and in the other under twelve months. Another consideration was that between the age of six months and twelve months a great many infantile ailments came in, and it was most desirable that the vaccination should be over before they appeared. After six months a child left its mother's arms and began to move about, and there was great risk of the vesicles being broken and irritation caused. At present a great number of children now escaped vaccination. In 1893 out of 914,000 there were 133,000 unaccounted for by vaccination; in 1894 out of 889,000 there were 156,000; and in 1895 out of 921,000 there were 175,000, and if they extended the period for vaccination he felt certain that there would be a still further default in vaccination.

Mr. Chaplin said he could not hold out against this pressure of opinion and would accordingly accept the amendment.

The amendment was put from the chair and at once adopted by the committee.

Mr. Sydney Gedge moved to insert in the clause: "Every parent or other person having the custody of a child who shall take it or cause it to be taken to the public vaccinator within the said period of twelve months to be vaccinated, or shall within such period as aforesaid cause it to be vaccinated by some other medical practitioner shall be entitled to the sum of 1*s*. The public vaccinator or other medical practitioner who has vaccinated the child shall pay to such person as aforesaid the sum of 1*s*., and shall be repaid the same by the sanitary authority, and every such medical practitioner other than the public vaccinator shall also be paid a fee of 2*s*. 6*d*. in respect of each child vaccinated by him upon his sending to the sanitary authority a certificate that the child has been vaccinated and 1*s*. paid as aforesaid. The Local Government Board may prescribe a form for the purpose of certificate to be sent in pursuance of this section, and if such form be so prescribed it shall be used in all cases to which it applies. The sanitary authority shall gratuitously supply forms of certificates to any medical practitioner residing or practising in their district who applies for the same, and shall pay to every medical practitioner for each certificate a fee of 2*s*. 6*d*., and also the sum of 1*s*. so paid by him as aforesaid." The hon. Member expressed his confidence that this amendment would get over nine-tenths of the conscientious objections to vaccination.

Mr. Chaplin intimated that he could not accept the amendment, though he admitted it would give him a most powerful weapon against the anti-vaccinator.

Mr. Bayley suggested that the hon. Member should not stop at a shilling but give a larger bribe.

Sir Walter Foster scouted the idea that people with conscientious objections were to be bought over in this fashion.

Mr. Steadman spoke of the amendment as an insult to the working classes of England.

After some further debate the amendment was negatived without a division.

Sir Walter Foster then moved to add at the end of the first Sub-section of the clause: Where a child is by this Act required to be vaccinated within a certain time (hereinafter called the appointed time) the parent or person having the custody of the child may, not less than two months before the expiration of the appointed time, make in the prescribed form a statutory declaration of conscientious objection to the vaccination of the child, and if the statutory declaration is within seven days after its date delivered to the registrar of births for the district in which the child resides the registrar shall register the same, and shall, if required, deliver to the parent or other person making the declaration a certificate of such registration and shall also send a copy of the certificate to the public vaccinator of that district, and thereupon an order shall not be made or proceedings taken with reference to the non-vaccination within that appointed time of the child mentioned in the certificate. The parent or other person registering a statutory declaration under this section shall, if he requires a certificate of such registration, pay to the registrar the prescribed fee for a certificate of registration." This amendment, Sir Walter Foster said, was based on the report of the Royal Commission and would, he thought, help to mitigate the feeling of irritation which existed in the country and would do away with the vaccination martyr. His aim was to save vaccination from discredit and make it general and effective. The medical press, he said, was prepared nowadays to accept a suggestion of this kind because they saw in it a likelihood of efficient vaccination and the possibility of a system of revaccination.

The amendment was under discussion when the committee adjourned until Friday, June 17th.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.
Outlines of Practical Surgery. By Walter G. Spencer, M.B., M.S., F.R.C.S. 1896. Price 12*s*. 6*d*. net.

BAILLIÈRE ET FILS, Paris.
Guide et Formulaire de Thérapeutique Générale et Spéciale. Par Dr. V. Herzen. 1898.

BLACKIE AND SON, London and Glasgow.
The Principles and Practice of Modern House Construction. Edited by G. Lister Sutcliffe. Div. Vol. I. 1898.

CARRÉ, GEORGES, ET C. NAUD, Paris.
Le Cancer. Maladie Infectieuse à Sporozoaires. Par Dr. F. J. Bosc. 1898.

CASSELL AND CO., London.
The Life of Wm. E. Gladstone. Edited by Sir Wemyss Reid. Illustrated. Part I. To be completed in 12 parts, price 6*d*. each. 1898.

"CHEMIST AND DRUGGIST," OFFICES OF THE, Cannon-street, London.
Pharmaceutical Formulas. By P. MacEwan, F.C.S. 1898. Price 8*s*.

CLOWES, WILLIAM, AND SONS, Charing-cross, London.
Stretcher Drill Illustrated, including Hand, Seat, and Wagon Drill. By Surgeon-Major J. J. de Zouche Marshall. 1898. Price 2*s*. 6*d*.

CONSTABLE, A., AND CO., Whitehall-gardens, Westminster.
Travels and Life in Ashanti and Jaman. By R. A. Freeman. Illustrated. 1898. Price 21*s*.

DE BAILLY-BAILLIÈRE É HIJOS, Madrid.
Tratado De Anatomia Filosofica. Por Dr. D. Ricardo Lozano Monzon. Primera Serie: Osteologia, Artrologia, y Miologia. 1898.

DIGBY, LONG, AND CO., Bouverie-street, Fleet-street, London, E.C.
Memoirs of a Young Surgeon. By Frederick Ashurst, M.B. Price 1*s*. 6*d*.

FIRMIN-DIDOT ET CIE., Paris.
Les Français d'Aujourd'hui. Par Edmond Demolins. Deuxième mille.

FISCHER, GUSTAV, Jena.
Die Zelle und die Gewebe. II. Von Professor Dr. Oscar Hertwig. 1898.
Handbuch der Therapie innerer Krankheiten. Von Dr. F. Penzoldt und Dr. R. Stintzing. Elfte und Zwölfte Lieferungen. 1898.

GRIFFIN, CHARLES, AND CO., Exeter-street, Strand, London.
Year-Book of the Scientific and Learned Societies of Great Britain and Ireland. Compiled from official sources. 15th annual issue. 1898. Price 7*s*. 6*d*.

HOEPLI, ULRICO, Milano.
Raggi di Röntgen e loro Pratiche Applicazioni di Italo Tonta. 1898.

KEGAN PAUL, TRENCH, TRÜBNER, AND CO., Charing-cross-road, London.
B. Bradshaw's Bathing-places and Climatic Health Resorts. 1898. With a Map. Price 2*s*. 6*d*.

KIMPTON, H., High Holborn, London.
Lectures on the Malarial Fevers. By W. S. Thayer, M.D. 1898. Price 12*s*. net.

KORNFELD, H., Berlin, W., 35.
Anatomie der Nervenzellen. Von Professor Dr. A. Goldscheider und Dr. E. Flatau. 1898.

LABOUR PRESS, Miller-street, Manchester, and the "Clarion" Office, Fleet-street, London.
Diary Notes of a Visit to Walt Whitman and Some of his Friends in 1890, with a Series of Original Photographs. By John Johnston, M.D. Edin. 1898. Price 3*s*. 6*d*.

LEHMANN, J. F., München.
Atlas und Grundriss der Traumatischen Frakturen und Luxationen. Von Professor Dr. H. Helferich und B. Keilitz. Band 8. 4. Auflage. 1898.

LEWIS, H. K., Gower-street, London.
Text-book of Diseases of the Kidneys and Genito-urinary Organs. By Professor Dr. P. Fürbringer. Translated by W. H. Gilbert, M.D. In two vols. Vol. II. 1898.

LONGMANS, GREEN, AND CO., Paternoster-row, London.
Comfort and Cleanliness. The Servant and Mistress Question. By Mrs. Catherine M. Buckton. 1898. Price 2*s*.

MACMILLAN AND CO., London.
A System of Medicine. By many Writers. Edited by T. C. Allbutt, M.D., F.R.C.P. Vol. V. 1898. Price 25*s*. net.

PENTLAND, YOUNG J., Edinburgh.
The Nervous System and its Diseases. By Chas. K. Mills, M.D. Illustrated. 1898.

REBMAN PUBLISHING COMPANY, Adam-street, Strand, London.
An American Text-book of Genito-urinary Diseases, Syphilis, and Diseases of the Skin. Edited by L. Bolton Bangs, M.D., and W. A. Hardaway, A.M., M.D. In 2 Vols. Illustrated. 1898. Price 42*s*.
Treatment: A Journal of Practical Medicine and Surgery. Vol. I. 1898. Price 12*s*.

SAMPSON LOW, MARSTON, AND CO., Fetter-lane, Fleet-street, London.
Twentieth Century Practice. Edited by Thos. L. Stedman, M.D. Vol. XIII., Infectious Diseases. 1898.

SCIENTIFIC PRESS, Southampton-street, Strand, London.
Burdett's Hospitals and Charities, 1893. By Sir H. Burdett. Price 5*s*.

SHERWOOD, A. G., AND CO., New York.

Transactions of the American Pediatric Society, Ninth Session, held in May, 1897, in Washington. Edited by Floyd M. Crondall, M.D. Vol. IX. Reprinted from the Archives of Pediatrics, 1897.

STANFORD, EDWD., Cockspur-street, Charing-cross, London.

Patented Geological Model of London and Suburbs. By Jas. B. Jordan. 1898. Price in frame, 15s.

STEINHEIL, G., Paris.

Massage Gynécologique (Méthode Thure Brandt). Par Gustave de Frumerie. 1897.

SWAN SONNENSCHEIN AND CO., London.

Practical Plant Physiology. By Dr. W. Detmer. Translated from the second German edition by S. A. Moor, M.A. Camb., F.L.S. Illustrated. 1898. Price 12s.

The Wonderful Century: its Successes and its Failures. By A. R. Wallace. 1898. Price 1s. 6d.

THACKER, W., AND CO., Creed-lane, London.

Notes and Appendix to the Fourth Edition of Friedberger and Fröhner's Lehrbuch der Speciellen Pathologie und Therapie der Hausthiere. By M. H. Hayes, F.R.C.V.S. With a Chapter by Dr. G. Newman, D.P.H. 1898.

TROW DIRECTORY PRINTING COMPANY, New York.

Medical and Surgical Report of the Presbyterian Hospital in the City of New York. Vol. III. January, 1898. Edited by A. J. McCosh, M.D., and W. B. James, M.D.

WARWICK BROS. AND RUTTER, Front-street, West, Toronto,

Sixteenth Annual Report of the Provincial Board of Health of Ontario for the year 1897.

WERNER COMPANY, Cockspur-street, London.

Schenk's Theory. The Determination of Sex. By Dr. Leopold Schenk. Authorised Translation. 1898. Price 5s.

WRIGHT, J., AND CO., Bristol.

Rheumatoid Arthritis: Its Pathology, Morbid Anatomy, and Treatment. By G. A. Bannatyne, M.D. Glasg., M.R.C.P. Edin. Second Edition. Illustrated. 1898. Price 7s. 6d. net.

Bad Kreuznach und seine Umgebung in Vergangenheit und Gegenwart. Herausgegeben vom Kurverein (R. Voigtländer, Kreuznach. 1898).—Der Kraftverbrauch beim Radfahren. Von Stabsarzt Dr. Sehrwald (Separatabdruck aus dem Archiv für Hygiene, Band xxxii., Heft 4).—Catalogue of Lewis's Medical and Scientific Library, including a Classified Index of Subjects. New Edition. 1898. Price 5s.—Handbook on the Workmen's Compensation Act, 1897. By Mr. Roberts-Jones, Barrister-at-Law. Fifth Edition. 1898. Price 2s. 6d.—La Protection et la Santé de l'Ecolier et les Colonies Sanitaires de Vacances. Conférence de M. le Dr. Delvaille, de Bayonne, faite à "Biarritz Association" le 10 Juin, 1897 (A. Lamaignère, Biarritz, 1897).—Autour d'une Epidémie: Bayonne 1837-1897. Par Dr. C. Delvaille (A. Maloine, Paris. 1898).—Magazines, &c., for June: Strand Magazine, Boy's Own Paper with Summer Number, Girl's Own Paper with Summer Number, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Chapman's Magazine, Myra's Journal, Pall Mall Magazine, Windsor Magazine, Cornhill Magazine, Blackwood's Magazine, Pearson's Magazine, English Illustrated Magazine, Knowledge, Humanitarian, Wide World Magazine, St. Peter's Magazine, Fashion and Fancies, and The Home Magazine.

Appointments.

Successful Applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.

BARLING, A. STANLEY, M.R.C.S., L.R.C.P., has been appointed by the Home Secretary Medical Referee under the Workmen's Compensation Act for the Lancaster County Court District.

BLUMFELD, J., M.D., B.C. Cantab., has been appointed Anæsthetist for the Grosvenor Hospital for Women and Children, Vincent-square, Westminster.

BOYCE, Professor R. W., has been appointed an Analyst for the City of Liverpool.

BROWNE, ADA M., L.S.A. Lond., has been appointed Assistant Anæsthetist for the New Hospital for Women, Euston-road, London.

CANTLIE, JAMES, M.A., M.B., F.R.C.S., has been appointed Surgeon for the West-end Hospital for Nervous Diseases, Welbeck-street, London, vice Edward Cotterell, deceased.

CHRISTOPHERS, S. R., M.B., Ch.B. Vict., has been appointed Assistant Medical Officer for the Mill-road Infirmary of the West Derby Union.

DAVIES, W. J. E., L.R.C.P., M.R.C.S., has been appointed an Assistant Medical Officer for the Infirmary of the Parish of St. Luke, Chelsea, vice A. E. Druitt, resigned.

DAVIES, W. T., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Second and Third Sanitary Districts of the Hertford Union.

FORBES, F. G., M.B., C.M. Edin., has been appointed an Assistant Resident House Surgeon for the Cardiff Infirmary.

FULLER, E. BARNARD, M.B., C.M., F.R.C.S. Edin., has been appointed an Honorary Medical Officer for the Somerset Hospital, Capetown, Cape Colony, vice C. F. K. Murray, resigned.

GOUGH, BERNARD B., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon for the Infirmary, Burton-on-Trent.

GREENWOOD, T. PARKER, M.B., C.M., B.Sc. Edin., has been appointed Third Assistant Medical Officer for the County Asylum, Fareham, Hants.

HUNT, J. W., M.D. Lond., M.R.C.S., has been appointed Medical Officer for the No. 7 Sanitary District of the Hackney Union.

KNOTT, CHAS., M.R.C.P. Edin., M.R.C.S., has been appointed Medical Superintendent for the Infirmary of the Portsea Island Union.

LEADER, C. R., M.B., C.M. Irel., has been appointed Medical Officer pro tem. by the Wem Rural District Council, vice C. A. Corke, resigned.

MACPHERSON, H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Bere Ferrers Sanitary District of the Tavistock Union.

METCALFE, G., M.D. Durh., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Eastville Workhouse of the Bristol Union.

MORLEY, H. W., L.R.C.P. Lond., M.R.C.S., has been appointed Resident Assistant Medical Officer for the Infirmary of the Portsea Island Union.

SANDALL, T. E., M.B., B.C. Camb., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Alford Sanitary District of the Spilsbury Union.

TABB, J. F., M.R.C.S., L.S.A., has been re-appointed Medical Officer for the Greenwich East Sanitary District of the Greenwich Union.

THORNE, MAY, M.D. Brux., L.S.A., has been appointed Assistant Anæsthetist for the New Hospital for Women, Euston-road, London.

WIGGINS, W. D., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer for the Workhouse and Infirmary of the Greenwich Union.

WILLIAMS, JOHN D., M.D., C.M., B.Sc. Edin., has been appointed Honorary Consulting Gynæcologist for the Cardiff Provident Dispensary.

WOOD, T. JASON, M.D. Lond., M.R.C.S., L.R.C.P., has been appointed Assistant Surgeon for the Bradford Royal Infirmary.

WRIGHT, F., L.S.A. Lond., has been appointed Medical Officer for the York (Escrick Out-Relief) Union.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road, Birkenhead.—House Surgeon. Salary £50, with board, apartments, and laundry. Applications to Mr. F. H. Carver, Hon. Sec., 5, Rumford-place, Liverpool.

CARDIFF INFIRMARY.—Assistant House Physician for six months. Board, apartments, and washing, and an honorarium of £10.

CLAYTON HOSPITAL, Wakefield.—Junior House Surgeon, unmarried. Salary £60 per annum, with board, lodging and washing.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY, Chesterfield.—Resident House Surgeon for two years. Salary £100 per year, with board, apartments, and laundress.

DENTAL HOSPITAL OF LONDON AND LONDON SCHOOL OF DENTAL SURGERY, Leicester-square.—Demonstrator. Honorarium £50 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E.—Senior Resident Medical Officer. Salary £70, with board and washing.

GLOUCESTER COUNTY ASYLUM.—Locum Tenens for about three months. Terms £2 2s. per week and all found (except liquors).

GUEST HOSPITAL, Dudley.—Resident Assistant House Surgeon for six months. Salary at the rate of £40 per annum, with board, lodging, and washing in the hospital.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians.

LIVERPOOL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Non-Resident Medical Officer. Stipend £70 per annum.

NORFOLK AND NORWICH HOSPITAL, Norwich.—House Physician for two years, unmarried. Salary £60 per annum, with board, lodging, and washing.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—Honorary Anæsthetist for twelve months.

PARISH OF ST. LEONARD, Shoreditch.—Resident Assistant Medical Officer for the Workhouse and Infirmary. Salary £120 per annum, rising £10 annually to £150 per annum, with rations, furnished apartments, and washing in the Infirmary, subject to statutory deductions. Applications to the Clerk to the Guardians, 213, Kingsland-road, N.E.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Examiner in Dental Surgery.

ROYAL HALIFAX INFIRMARY.—House Surgeon, unmarried. Salary £80 per annum, advancing £10 per year up to £100, with residence, board, and washing.

ROYAL INFIRMARY, Sheffield.—Vacancy on the Honorary Surgical Staff.

ROYAL LONDON OPHTHALMIC HOSPITAL, Moorfields, E.C.—Assistant Surgeon. Also Junior House Surgeon. Salary £50, with board and residence in the hospital.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—House Surgeon.

SALISBURY INFIRMARY.—Assistant House Surgeon for six months, unmarried. Board, lodging, and washing provided, and an honorarium of £10 given.

ST. LUKE'S HOSPITAL, London, E.C.—Clinical Assistant for six months. Board and residence provided.

SUNDERLAND BOROUGH ASYLUM, Ryhope, near Sunderland.—Clinical Clerk (qualified), for three or six months. Salary at the rate of £20 per annum, with board, lodging, and washing.

SUNDERLAND INFIRMARY.—House Surgeon. Salary £80, rising £10 annually to £100, with board and residence.

SUSSEX COUNTY HOSPITAL, Brighton.—Assistant House Surgeon, unmarried. Salary £30 per annum, with board and residence in the hospital.

UNIVERSITY COLLEGE, London.—Resident Medical Officer.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea, S.W., and the VICTORIA CONVALESCENT HOME, Broadstairs.—House Physician for twelve months. Board and lodging in the hospital provided, and an honorarium of £50 will be given.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea, S.W.—House Surgeon and Anæsthetist in the Out-patient Department for six months. Honorarium £20, and luncheon at the hospital provided.

WEST RIDING ASYLUM, Wakefield.—Pathologist. Salary £150, increasing to £200.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—House Surgeon and to act as Surgical Registrar. Salary £100 a year, with board, lodging, and washing. Also Assistant House Surgeon for six months. Board, lodging, and washing provided, and a small honorarium will be given.

Births, Marriages, and Deaths.

BIRTHS.

ARNOLD.—On June 11th, the wife of Ernest Charles Arnold, M.B., F.R.C.S. Eng., of Park-road, Forest-hill, of a daughter.

BERRIDGE.—On June 8th, at Enderby, Leicestershire, the wife of William Robert Berridge, M.R.C.S., L.R.C.P. Lond., of a daughter.

RANSOME.—On June 7th, at Chase Side, Southgate, the wife of A. Sidney Ransome, M.B., B.C., D.P.H. Cantab., of a daughter.

SIMS.—On June 12th, at The Hollies, Green-hill, Derby, the wife of G. S. Sims, M.R.C.S., L.R.C.P., of a daughter.

SOUTH.—On June 9th, the wife of Richard E. E. South, L.R.C.P., M.R.C.S., of Church Close, Boston, Lincolnshire, of a son.

WYNNE.—On June 5th, at Leigh, Lancashire, the wife of Fred. E. Wynne, M.B., of a daughter.

MARRIAGES.

AUSTIN ROBINSON—ROGERS JENKINS.—On May 10th, at S. Augustine's, Durban, Natal, by the Rev. Canon Booth, M.D., assisted by the Rev. Hayes Robinson and the Rev. J. Walton, Frederick Augustine Robinson, L.R.C.P., M.R.C.S., District Surgeon, Nondweni, Zululand, to Lilian Agnes Rogers Jenkins, L.R.C.P. & S. Edin., L.F.P.G., &c., late of Lucknow, N. India.

BOWER—SHERINGHAM.—On June 9th, at Tewkesbury Abbey, by the Rev. H. A. Sheringham, Vicar, brother of the bride, assisted by the Ven. the Archdeacon of Gloucester and the Rev. Ernest Dykes, Vicar of Barrow-in-Furness, cousin of the bridegroom, Ernest Dykes Bower, of Elton House, Gloucester, to Margaret Dora Constance Sheringham, youngest daughter of the Archdeacon of Gloucester and Canon of Gloucester Cathedral.

BUTLER—GULLICK.—On June 7th, at Christ Church, Bath, Arthur George Butler, M.B. Lond., of Trevose, Beckenham-road, Penge, to Maude Corallina, eldest daughter of T. Gullick, Esq., of Heathfield, Bath.

FRIPP—HAYWOOD.—On June 8th, at the Parish Church, Reigate, Alfred Downing Fripp, M.S., F.R.C.S., of Portland-place, W., to Margaret Scott, only daughter of Thomas Burt Haywood, of Woodhatch, Reigate.

GRAHAM—BLACKBURN.—On June 14th, at Batley Parish Church, Vyner Graham, M.R.C.S., L.R.C.P., of Westbrook House, Aston, Birmingham, to Sarah Alice (Sissie) eldest daughter of J. W. Blackburn, J.P. (Mayor of Batley), Field House, Batley.

HEDGES—MCCAUL.—On June 8th, at St. Pancras Church, Charles E. Hedges, M.B. Camb., elder son of Thomas Hedges, of Heywood House, Stewkley, Bucks, to Ella Mildred, youngest daughter of J. C. C. McCaul, Taviton-street, Gordon-square.

JOHNSTON—BAKER.—On June 9th, at St. Peter's Church, Earley, Reading, by the Rev. F. J. Greenham, assisted by the Rev. C. E. Adams, Vicar of St. Peter's, David Richmond Johnston, B.A. T.C. Dublin, L.R.C.P. Edin., and of Reading, youngest son of the late Rev. Thos. Johnston, of Killarney, co. Kerry, Ireland, to Maud, eldest surviving daughter of Edward Edmund Baker, Esq., C.E., of Stoneleigh, Eastern Avenue, Reading.

SIBSON—POLLARD.—On June 1st, at the Friends' Meeting House, Tottenham, Arthur B. Sibson, M.R.C.S., L.R.C.P., L.D.S. Eng., youngest son of Daniel Sibson, Esq., of Stockton-on-Tees, to Henrietta Louise, eldest daughter of Henry J. Pollard, Esq., of Essex Lodge, Tottenham.

WEBB—HOPWOOD.—On April 5th, at Christ Church, North Adelaide, by the Ven. Archdeacon Farr, M.A., LL.D., James Ramsay, M.B., B.S., F.R.C.S., son of Richard John Webb, late of the Victorian Police Force, to Mabel Emma, eldest daughter of James Cuthbert Hopwood, of Stoke Newington, London.

DEATHS.

BARREN.—On June 8th, in London, Brigade-Surgeon-Lieutenant-Colonel William A. Barren, Bombay Sappers and Miners, aged 43 years.

CASE.—On June 15th, at 5, Langhorne-gardens, Folkestone, Henry Case, M.R.C.S. Eng., for twenty-two years Medical Superintendent of Leavesden Asylum, King's Langley, Herts, aged 53 years. (Funeral at Folkestone Cemetery on Saturday at 2 o'clock.)

FOSTER.—On June 10th, at the British Hospital, Port Said, Franz F. Foster Foster, M.R.C.S., L.R.C.P. Lond., only surviving son of the late Colonel Foster Foster, aged 33 years.

LEE.—On June 11th, at his residence, Queensborough-terrace, Hyde-park, Henry Lee, F.R.C.S., late of Savile-row, W., Senior Consulting Surgeon to St. George's Hospital, aged 81 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Stewart's Instruments.)

THE LANCET Office, June 16th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
June 10	30·03	N.E.	0·10	81	63	56	56	58	Raining
,, 11	30·11	S.E.	0·07	118	76	53	56	61	Fine
,, 12	30·25	N.E.	...	66	57	52	52	54	Overcast.
,, 13	30·35	N.E.	...	72	58	49	49	52	Overcast
,, 14	30·27	N.E.	...	80	57	50	48	52	Overcast.
,, 15	30·27	N.E.	...	104	63	49	47	51	Overcast
,, 16	30·23	N.E.	...	84	59	49	49	52	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.).

TUESDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.).

WEDNESDAY (22nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.).

THURSDAY (23rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.).

FRIDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.).

SATURDAY (25th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (20th).—CHARITY ORGANISATION SOCIETY (Theatre of the Royal United Service Institution, Whitehall, S.W.).—4.30 P.M. Papers:—Mr. C. Dent: Proposed Arrangements for Out-patients at the New Belgrave Hospital for Children.—Mr. W. H. Kesteven: The General Practitioner and Out-patient Department.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (20th).—LONDON POST-GRADUATE COURSE.—London Throat Hospital, Gt. Portland-st., W., 8 P.M., Dr. G. Stoker: Impaired Movements of the Vocal Cords.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Mr. Lennox Browne: Acute Inflammation of the Accessory Sinuses of the Nose.

TUESDAY (21st).—ROYAL COLLEGE OF PHYSICIANS.—5 P.M. Dr. S. Martin: The Chemical Products of Pathogenic Bacteria considered with special reference to Enteric Fever. (Croonian Lecture.)

LONDON POST-GRADUATE COURSE.—Hospital for Skin Diseases, Blackfriars, 4.30 P.M., Dr. Abraham: Pemphigus and Dermatitis Herpetiformis.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. Mr. Tooth: Lecture.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street).—4.30 P.M. Mr. D. Grant: On Disorders of the Ear in their relation to Diseases of the Nervous System.

WEDNESDAY (22nd).—LONDON POST-GRADUATE COURSE.—Parkes Museum, Margaret-st., W., 4.30 P.M., Prof. A. Wynter Blyth: Disinfection and Disinfectants.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Habershon: The Diagnosis of Pleural Effusion.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Robinson: Gynæcological Cases.

THURSDAY (23rd).—ROYAL COLLEGE OF PHYSICIANS.—5 P.M. Dr. S. Martin: The Chemical Products of Pathogenic Bacteria considered with special reference to Enteric Fever. (Croonian Lecture.)

LONDON POST-GRADUATE COURSE.—Central London Sick Asylum, Cleveland-st., W., 5.30 P.M., Mr. J. Cantile: Intestinal Flux.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Mr. Barlow.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.)—5 P.M. Dr. D. Grant: Diseases of the Frontal Sinus.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Mott: Demonstration of Medical Cases. (Post-graduate Class.)

FRIDAY (24th).—LONDON POST-GRADUATE COURSE.—King's College 3 to 5 P.M., Dr. Wilkinson: Tetanus, Rabies, and Cholera.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICE TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

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HOME-NURSING OF PAUPER PATIENTS.

AT a meeting of the Loughborough Board of Guardians held on June 7th, Mr. P. Phelps, a medical member of the board, brought forward the question of the nursing of the out-door sick poor of the union. The system at present in use is that the relieving officer employs any one who is willing to undertake the work, entirely without reference to her knowledge or suitability. He argued that the sick poor ought to be attended to quite as well outside the workhouse as inside, but it was impossible to expect proper nursing for 1s. 6d. a week, the sum paid in one particular case which Mr. Phelps described, and he moved that the board should provide a properly qualified nurse to attend on the sick poor of the union. The chairman remarked that the matter had been brought before the board several times and the decision come to was that they could not support the Queen's Nursing Association. After a discussion the motion was lost by a considerable majority.

TOUTING OPTICIANS.

WHEN does a practitioner accept the services of a tout? The question is not always an easy one. For example, a patient goes to an optician to have her eyeglasses repaired and he recommends her, without being asked, not to see her own medical man but to consult another practitioner in the same town, who sees the patient and does not communicate with her medical man. The consultant is blamed by the practitioner, but he admits no offence and has been informed that any optician whose advice is asked by a customer is justified in giving the advice which he thinks best for the customer. Clearly the medical profession has no power of stopping the mouths of opticians, except through the agency of those gentlemen who are by their recommendations placed in the somewhat delicate position of taking the patient of another medical man. It is alleged by the aggrieved practitioner that the optician's advice was not asked. At any rate it was given, it was acted on and for this occasion the patient was transferred. We are not disposed to blame the consultant too much. But he should, we think, give the friendly optician a hint against volunteering advice to the patients of other medical men, and when he is so consulted by those whom he has reason to know are the patients of another practitioner he might put himself in friendly communication with the practitioner. There is nothing in which the courtesy of the profession is more shown than when one of its members does his best to neutralise the officious patronage of indiscreet friends.

"THE LATE ARTHUR JEFFARES BARLOW."

To the Editors of THE LANCET.

SIRS,—Please acknowledge in THE LANCET the enclosed sums on behalf of this fund. I am, Sirs, yours faithfully,

179, Hither-green, Lewisham, June 13th, 1898. R. H. CAPPER.

	£ s. d.		£ s. d.
Per Dr. Clibborn:—		Per Dr. Moore:—	
Dr. S. MacLaughlan (Strangford)	1 1 0	Sir Francis Cruise, M.D., Dublin	1 1 0
Dr. J. M. Elliott (Rathfriland, Co. Down)	1 1 0	Professor A. V. Macan (Dublin)	1 1 0
		"G. P." (Woolwich) ...	1 1 0

HOLY WATER AND INFECTION.

A CORRESPONDENT writing to the *English Churchman* points out the danger of infection from holy water, and relates what he saw at Milan Cathedral a little more than a month ago: "At the entrance of the cathedral," he says, "is a basin containing holy water, around which I saw a group consisting of a poor man, a Sister of Mercy, and probably his mother or wife. The poor man, suffering from a terrible affliction of the eyes, was having his bandages taken off, dipped in the water, and readjusted with many invocations." He concludes: "Oh, for faithful, earnest men who, before it is too late, would sound a warning voice against the spread of such rank superstition and physically dangerous error!" and we heartily join with him in his plea.

A QUESTION OF FEES IN A CORONER'S COURT.

To the Editors of THE LANCET.

SIRS,—The following short account of a recent inquiry at a coroner's court presided over by a legal gentleman may be of interest to some of my medical *confrères*. Briefly the facts are as follows. I was called to a case one morning and when I arrived about noon I found a child aged sixteen months in a state of profound collapse and passing loose stools mixed with blood. I was informed that the child had been quite well up to that morning. There was no evidence of intussusception. I informed the mother of the child that the condition was very serious and might prove fatal. I saw the child again about 3 P.M., when the collapse was more profound, and the child died about 5 P.M. At the inquiry which was held the mother gave evidence that a considerable quantity of blood followed a rectal examination that I made, and that when some brandy and barley-water which I had ordered were given the child immediately passed into convulsions and died in that state. I gave in my evidence that the child was in a state of collapse when first seen and had not shown signs of convulsions, that I made a rectal examination to try to determine the existence or not of intussusception, that the examination made carefully could not produce bleeding, and that as a matter of fact the same blood-stained matter came away from the bowel after the examination as before, and that a post-mortem examination was desirable to determine the cause of death. The coroner entered minutely into the question of rectal examination, discussed in detail the doses of brandy I had thought fit to prescribe, and informed the jury that he considered that a very grave imputation had been made on me, and discussed the matter in such a way as to make it plain to the jury that he considered it quite possible that I had seriously injured the child by the rectal examination, and that I might have sent the child into fits by giving it the brandy. It was determined to postpone the inquiry until a post-mortem examination had been made, the examination to be made not by me but by the police-surgeon, and I was ordered personally by the coroner to be present at the examination of the body and to appear at the adjourned inquest. The examination disclosed acute inflammation of the whole of the large intestin

and also a tuberculous condition of the abdominal glands and the verdict was given accordingly after the police-surgeon had been subjected to close examination by the coroner on the subject of rectal examinations and the dosage of brandy; but the coroner refused me a fee for attendance at the post-mortem examination, although I had been expressly ordered by him to attend, on the ground that charges had been made against me and that he ordered me to attend in my own interests. Now, Sirs, I have been many years in practice, and have attended many inquests, but I am a new-comer in this town, and it is a new experience for me to come into contact with a coroner so ignorant of ordinary medical procedure as to allow a charge to be bolstered up against a qualified medical man upon such a frivolous basis, and I consider that as I was instructed to attend at the post-mortem examination I am entitled to a fee for the same. I should be glad to know your opinion in the matter. I am, Sirs, yours faithfully,

June 7th, 1898. M.D. EDIN.

*** Our correspondent has our sympathy, for he has not received pleasant treatment, but we doubt if he could justify a claim for a fee. Circumstances were made to wear an appearance which would have necessitated his presence at the post-mortem examination whether he was ordered to be there or not. In every walk of life a man may have to defend himself against imputations which can be shown to be quite unjust and to do so at personal inconvenience and loss. The coroner being a lawyer had not the necessary knowledge to understand the child's condition, but that, though regrettable, was not his fault.—ED. L.

NURSING INSTITUTIONS AND THEIR CHARGES.

To the Editors of THE LANCET.

SIRS,—It may be of some interest to many of my *confrères* to know my experience of nursing institutions. Recently my wife contracted typhoid fever and I employed nurses from the Hanover Institute, the charges per week for each nurse, besides extras, being £3 3s. Being under the impression that some reduction was usually made to medical men and their wives, I wrote to ask if any reduction could be made in my case, and received a negative reply. I then wrote to another institution, the London Association of Nurses, asking if any reduction was made to the medical profession and received the following answer: "We do try to make a reduction in the nurses' fees when sent to a medical man" and "would be pleased to reserve you a nurse suitable for a typhoid case whose fee would be £1 11s. 6d. per week." I have no doubt other institutions do the same except the one in question. I think it my duty to make it known, as this must be a serious matter for many a struggling practitioner.

I am, Sirs, yours faithfully,

Balham, S.W., June 15th, 1898. LEWIS JONES, M.D. Dub.

*** Medical men are generally asked to attend nurses gratis or at greatly reduced fees. We believe they invariably accede to the request, so that we think it quite reasonable that a nursing institute should be prepared to make corresponding reductions to medical men.—ED. L.

ETIQUETTE FOR THE ANÆSTHETIST.

To the Editors of THE LANCET.

SIRS,—Would you kindly give me your opinion on the following case. A lady who has been under the care of a chiropodist for several months for ingrowing toe-nail decides under his advice to have the nail removed, which he agrees to do in the presence of a qualified man who gives chloroform. Is the medical man justified in giving the anæsthetic? and should anything happen at the operation or afterwards does the chiropodist render himself or his employer liable to legal proceedings? I am, Sirs, yours faithfully,

June 11th, 1898. J. D. B.

*** A medical man should not give an anæsthetic for a chiropodist. An anæsthetist's attention should be devoted to giving the anæsthetic: his presence in the room does not make him responsible for any details of an operation. If he were to assume legal responsibility for a chiropodist's manœuvres he would be guilty of covering and would be removed from the Medical Register.

VESALIUS.

A FREQUENT correspondent writes:—"An American medical journal some time last year published an article on Vesalius, with facsimile reproductions of 'The Lesson of Anatomy,' by J. Van Calcar, which forms the title-page, and a portrait of Vesalius from his treatise of anatomy, as well as other engravings. I should be much obliged if you or any of your readers could give me the name of the author of the articles as well as that of the journal and its date."

AN IMPROVED MACHINE FOR MOVING BEDS IN THE SICK-ROOM.

FROM Mr. Hermann Blass, of 155, Camden-road, N.W., we have received a pamphlet describing an improved form of bed-carriage. In construction it is similar to some machines already in use and is simply a skeleton iron frame on rubber castors. It is placed under the bed and by means of a lever the bed is raised from the floor while being supported by the framework of the machine. The advantages claimed for the invention are (1) easy manipulation by one person of ordinary strength; (2) rapidity of action without shock or vibration; (3) the ease with which a patient can be transferred from one floor to another; (4) the placing of a bed in a good light quickly for the purposes of operation, &c.; and (5) the facility with which a ward or room can be disinfected and cleaned. Mr. Gustav Allzeit of Koenigsberg, Germany, is the inventor of the bed-carriage.

ARTIFICIAL LIMBS FOR WOUNDED SOLDIERS.

MESSRS. ARNOLD AND SONS of West Smithfield have received orders to supply the artificial limbs specially ordered by Her Majesty the Queen for the soldiers recently wounded in action, and we are informed that the Queen herself has expressed a wish that these artificial limbs shall be of the best construction.

Subscriber.—Our correspondent does not say if the man's wages will be continued during his illness. A man on such wages cannot afford remuneration in any way adequate to the services he has received. Unless he is insured against accident or has a sum laid by for such emergencies we do not see how he is to pay more than two guineas. Our correspondent is advised not to send his bill in for a less sum even if he have to take less.

Portlade.—We cannot say for certain that the General Medical Council would adjudge the action as "an infamous one in professional respects," but they might take that view and we believe they would. It would anyhow be an unfortunate thing for a medical man to do and one which, if it became known to his fellow practitioners, would damage him irretrievably in their eyes.

N. M. O.—We have thought it wiser not to print our correspondent's query as the case might be recognised. The medical officer of health would be wrong to report the matter to the guardians, but if it comes otherwise to their ken he must answer their inquiries. He runs no risk in doing so, as in the face of the death certificate there can be no doubt about the facts.

H. A. F. is right to safeguard his interests. The patient has a month in which to find another attendant if the reasonable request cannot be acceded to, so that our correspondent's conduct cannot possibly be construed as inhuman. The people are clearly not in a position to ask for or to expect credit.

Nitro-monas has not our experience or the advertisement would not come on him as such a shock. We cannot notice the case if only because while he mentions the name and address of the offending practitioner he withholds from us similar information with regard to himself.

J. A. R.—Public Health Laboratory Work, by Henry R. Kenwood, M.B. Edin., D.P.H. Second edition. London: H. K. Lewis. Price 10*s.* 6*d.* For further information our correspondent should consult the Students' Number of THE LANCET, Aug. 21st, 1897.

Memo.—No. Mr. Alfred Haviland's maps showing the distribution of cancer in the United Kingdom combined with geological knowledge give grounds for theorising.

Epsom.—We see no reason to depart from our rule, which is apparently known to our correspondent. The family medical man will be able to give all necessary help.

M.R.C.S. Eng.—The Report of THE LANCET Analytical and Sanitary Commission on Dangerous Paraffin Lamps appeared in THE LANCET of Jan. 4th, 1896.

Rally will find all the information he requires given with detail in the various Students' Numbers of THE LANCET.

ERRATUM.—Mr. H. Gold, the inventor of the window-cleaner's chair recently noticed in THE LANCET, writes from 31, Great Eastern-street, to say that the price of the chair is 5*s.* 6*d.*, not 4*s.* 6*d.* as stated.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received: *Newcastle Chronicle, Western Mail, Louth Times, Grantham Journal, Hereford Times, Manx Sun, Penrith Observer, East Anglian Daily Times, Sun, Times of India, Pioneer Mail, Glasgow Herald, Derby Telegraph, Scotsman, Citizen, Hull News, Bath Chronicle, Wigan Examiner, Sheffield Telegraph, Eastern Morning News, Leeds Mercury, Builder, South Wales Daily News, Dundee Advertiser, Birmingham Gazette, Bedford Observer, Malton Gazette, Mid Devon Times, Leicester Post, Sussex Daily News, Lincoln Gazette, Hampstead Express, Blackburn Standard, Architect, Driffield Observer, Lynn Advertiser, Essex Telegraph, Manchester Guardian, Bristol Mercury, Forfar Herald, Yorkshire Post, Brighton Gazette, Kentish Mercury, Indian Mirror, Hastings and St. Leonards News, Local Government Chronicle, Reading Mercury, Mining Journal, Pontypool Free Press, City Press, Hertfordshire Mercury, Hackney Express, Hove Echo, Nottingham Daily Express, Wheels, Kentish Observer, Weekly Free Press and Aberdeen Herald, Devon and Exeter Gazette, Surrey Advertiser, China Mail, Hong-Kong Weekly Press, Birmingham Daily Post, Irish Times, Nottingham City News, Liverpool Daily Post, Northern Daily Telegraph, Brighton Herald, Westminster Budget, West Middlesex Herald, Preston Guardian, Norwich Mercury, &c., &c.*

Communications, Letters, &c., have been received from—

A.—Dr. J. Adam, West Malling; Messrs. Arnold and Son, Lond.; *Archives des Sciences Médicales*, Paris; Surgeon E. Arkwright, H.M.S. *Seaflower*, Portland; Messrs. Allen and Hanburys, Lond.; Dr. J. Althaus, Lond.; Mr. F. W. Alexander, Lond.; Annan's Anti-Accident Apparatus Co, Lond.; A. K. Bunbury.

B.—Mr. C. A. M. Bailey, Guildford; Mr. J. Bland, Lond.; Mr. A. E. Barrett, Lond.; Mr. C. W. Baylis, Hvesham; Mr. L. A. Bidwell, Lond.; Mr. G. H. Browne, Brynmawr; Messrs. Burroughs, Wellcome, and Co., Lond.; Dr. C. A. Brugman; Mr. W. Stroom, South African Republic; Dr. R. Barnes, Lyss; Mr. C. Beesley, Darton; Mr. F. Dillon Bennett, Lond.; Mr. J. W. Barrett, Melbourne; Messrs. C. Barker and Sons, Lond.; Burton-on-Trent Infirmary, Secretary of.

C.—Dr. C. W. Chapman, Lond.; Mr. Mayo Collier, Lond.; Sir Daniel Cooper, Lond.; Cortland Wagon Co., Lond.; Chalmer's Hospital, Banff, Matron of; Mr. W. J. Chamberlain, Lond.; C. J. D.; Messrs. E. Chaloner and Co., Liverpool; Central London Throat and Ear Hospital, Lond., Secretary of; Messrs. Cameron, Commin, and Martin, Exeter; Mr. T. Cooke, Lond.

D.—Mr. T. Domela, Macolin, Switzerland; Messrs. Domeier and Co., Lond.

E.—Messrs. Eason and Son, Dublin; E. M. F., Lond.

F.—Messrs. Fannin and Co., Dublin; F. W. G., Broomhill.

G.—Messrs. R. W. Greeff and Co., Lond.; G. P., Liverpool; Guest Hospital, Dudley, Secretary of; Great Eastern Railway, Lond., Continental Traffic Manager of; G. H. G.; Dr. W. H. Gilbert, Baden-Baden; Gloucester County Asylum, Medical Superintendent of; Dr. C. D. Green, Lond.

H.—Dr. R. Hartley, Lond.; Mr. C. Heneage, Eastbourne; Hospital for Epilepsy and Paralysis, Lond., Secretary of; Dr. W. K. Hunter, Glasgow; Mr. A. Haviland, Farnborough; Dr. V. D. Harris, Lond.; Mr. C. H. Hulsh, Lond.; H. G.

I.—Messrs. J. G. Ingram and Son, Lond.

J.—Mr. J. Jessop, Sheffield; Mr. P. N. Jones, Lond.; Dr. Lewis Jones, Lond.; J. J. M.; Jenner Society, Gloucester, Hon. Secretary of.

K.—Dr. G. C. Kingsbury, Blackpool; Kent County Temperance Federation, Maidstone; Mr. C. Krohne, Lond.

L.—Mr. C. S. Loch, Lond.; Messrs. Lorimer and Co., Lond.; Mr. G. Ley, H.M.S. *St. Vincent*, Portsmouth; Liverpool Hospital for Consumption, Secretary of.

M.—Dr. S. Martin, Lond.; Metropolitan Provident Medical Association, Lond., Secretary of; Mr. J. McCleery, Nottingham; Dr. C. D. Musgrove, Penarth; Mr. F. H. Maberly, Lond.; Mrs. S. E. Mackintosh, Chesterfield; Male Nurses' (Abstainers) Coöperative Association, Lond.; Mr. H. W. Mills, Ruardean; Milk Preparations Co., Brentwood; Dr. R. Moir, St. Andrews; Dr. Montgomery, Manchester; Dr. H. McLaren, Govan; Dr. F. R. Mallett, Bolton; Mr. W. Marriott, Lond.

O.—Mr. F. Orchard, Lond.; Messrs. Orridge and Co., Lond.

P.—Mr. E. B. Pastor, Asaba; Mr. C. F. S. Perowne, Lond.; Mr. Y. J. Pentland, Edinburgh; Mr. M. Perceval, Cambridge, New Zealand; Dr. L. A. Parry, Lond.

R.—Mr. H. M. Ramsay, Lond.; Royal Halifax Infirmary, Secretary of; Messrs. Rock Bros., Lond.; Dr. R. M. Ralph, Lond.; Mr. R. Redpath, Newcastle-on-Tyne.

S.—Dr. R. H. Shaw, Brighton; Sunderland Borough Asylum, Medical Superintendent of; Messrs. Spiers and Pond, Lond.; Smith's Advertising Agency, Lond.; Sussex County Hospital, Brighton, Secretary of; Sanitas Co., Lond.; Mr. J. L. Sardy, Lond.; Sunderland Infirmary, Secretary of; Messrs. Samson, Clarke, and Co., Lond.; Messrs. W. H. Smith and Son, Manchester; Messrs. E. Shaw and Co., Manchester; Messrs. Smith, Elder, and Co., Lond.; Society for the Suppression of Street Nuisances, Lond.

T.—Mr. J. C. Taylor, Cronville; T. B. M.; Mr. J. Thompson, Macclesfield; Messrs. R. H. Thomson and Co., Leith.

U.—University College, Liverpool, Registrar of; University of Edinburgh, Dean of.

V.—Mr. H. de P. Veale, Leeds; Mr. G. C. Veale, Leeds; Mr. J. W. Vickers, Lond.

W.—Mr. M. M. Wills, Lond.; Mr. F. C. Wood, Ripley; Mr. F. F. White, Birmingham; W. H. B. C.; Weston-super-Mare Hospital, Secretary of; Messrs. Welford and Sons, Lond.; Miss Weir, Mont Dore; Dr. A. T. Wysard, Chatham.

Letters, each with enclosure, are also acknowledged from—

A.—A. M.; A. W. R.; A. G. M. H.; A. V. W.

B.—Mr. F. Bauermeister, Glasgow; Mr. H. D. Bower, Keswick; Dr. W. J. Brown, Chester-le Street; Bristol Electric Safety Lamp Works, Lond.; Dr. F. W. Burton-Fanning, Norwich; Birmingham, &c., Free Hospital, Secretary of; Dr. G. Brown, Manchester; Mrs. S. A. Bennett, Lond.; Messrs. Battle and Co., Paris; Bouverie-street (15), Lond.; B. J. L.

C.—Dr. Colenso, Lond.; Mr. W. R. Cumming, Mill Hill; County Borough of Salford, Treasurer of; C. W. M. G.; Central Stationery Co., Liverpool; Mr. D. Cooper, Royston; Mrs. Carter, Eastbourne; Dr. W. S. Carroll, Pontypridd; Clayton Hospital, Wakefield, Hon. Secretary of; Mr. A. M. Cato, Lond.; Dr. Cotton, Darsham.

D.—Dr. S. Delépine, Manchester; Messrs. Dixon and Hunting, Lond.; Denaeyer's Peptonoids Co., Lond.; D. M. S.; Dispenser, Lond.

E.—Messrs. Elliott, Son, and Boyton, Lond.; Edward, Lond.; Mr. F. G. Ernst, Lond.; E. M. C.

F.—Mr. F. C. FitzGerald, Hanley; F. W. G.; Mrs. Finch, Groombridge; Messrs. Farrer and Sons, Reading; Messrs. Fletcher, Fletcher, and Co., Lond.; Mr. P. J. Freyer, Lond.; F., Lond.; F. L. C.; F. H. L.; F. H.; Dr. F. D. Fisher, Bury St. Edmunds.

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